

Community-Based Senior Health Promotion Program Using a Collaborative Practice Model: The Escalante Health Partnerships

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Abstract Recent research demonstrates that, although the risk of disease and disability clearly increases with age, poor health need not be an inevitable consequence of aging. A healthy lifestyle is more influential than genetic factors in assisting older adults avoid the decline and deterioration traditionally associated with aging. Many effective strategies for reducing disease and disability are widely underused. The Escalante Health Partnerships is a community-based, nurse-managed health promotion and chronic disease care management program for community-residing older adults. The program base supports a multidisciplinary, collaborative practice model, which has responded to the health needs of members of a community at high risk of having or developing chronic conditions. Preliminary comparisons of the health status of program participants with national norms demonstrate that these seniors report better general health, performance of roles, and social functioning, with the strongest correlations occurring between general health and vitality and between general health and role-physical. In addition, these participants have 4.2 doctor visits per year, in comparison with 7.1 office visits for a national comparison group and 1.6 hospital days per

year, in comparison with 2.1 hospital days in the same referenced population. This collaborative partnership is a model that can be replicated cost-effectively in other communities.

Key words: health promotion, collaborative practice, community health, chronic disease management, quality of life, functional health, community coalitions, aging resources, strength training in the elderly.

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In the United States as of 2000, the number of persons aged 65 and older was estimated at 35 million, nearly 13% of the total population. By 2030 it is projected that one in five people will be aged 65 and older (Federal Interagency Forum on Aging-Related Statistics, 2000). Parallel to this is a projected growth in the absolute numbers of elderly persons suffering from some form of disability in performing activities of daily living (ADL). Some chronic condition limits nearly 40% of those not in institutions in performing these ADLs, for example, bathing, dressing or shopping, (Bureau of Epidemiology and Disease Control Statistics, 1998); 7.3 million (72.5%) people aged 75 and older have some functional limitation. Nationally, three times more people aged 85 and older need help with one or more ADLs than those aged 65 to 85 (Haskell & Phillips, 1998; Lee, 2000). Improvements in health will be of benefit only if accompanied by an increase in what has been termed “successful aging” (Rowe & Kahn, 1998; Phillips &

Haskell, 1995; Van Nostrand, Furner, & Suzman, 1993). The potential for aging successfully will be enhanced most by a capacity in the elderly to remain functionally independent and actively engaged in life (Brogan, Haber, & Kutner, 2000; Rowe & Kahn, 1998; Phillips & Haskell, 1995).

More than 65% of older Americans have some form of cardiovascular disease, and more than half of all men and two-thirds of all women in this population suffer from arthritis (Burke et al., 2001). According to the latest status report (Diabetes and Associated Complications in Arizona, 1999), 10.3 million individuals have diabetes. This report also described the economic costs incurred as diabetes causes 3.5 million hospital admissions per year, approximately 14% of all hospitalizations. In individuals aged 65 and older alone, diabetes costs more than \$5 billion dollars annually (Measuring Healthy Days, 2001). United States population surveys report that 33% to 39% of males aged 65 and older perform no leisure-time activity of any type. Female participation in leisure activity is reported as being substantially less (U.S. Department of Health and Human Services, 1996).

Being a popular Sun Belt retirement state, Arizona can expect to have its older population increase; it is one of seven states projected to have an increase of more than 100% in the number of people aged 65 and older by 2020 (Measuring Healthy Days, 2001). Naturally, with this growth, there is an increased need for medical and social health services and improvements in the continuity of these services delivered in a community setting. Chronic disease poses a heavy burden on individuals and society because it contributes to long-term illness and diminished quality of life. The sheer numbers of older persons in the next several decades threatens to overwhelm existing resources (Fries, Bloch, Harrington, Richardson, & Beck, 1993).

Recent research demonstrates that, although the risk of disease and disability increases with age, poor health need not be an inevitable consequence of aging. A healthy lifestyle is more influential than genetic factors in helping older adults avoid the decline and deterioration traditionally associated with aging (Minkler, Schauffler, & Clements-Nolle, 2000). Those who pursue health behaviors, particularly by engaging in physical activity, eating a healthy diet, and avoiding tobacco use, reduce their risk of chronic disease and have half the rate of disability of those who do not (Healthy Aging, 2001; Resnick, 1998; Phillips, Pruitt, & King, 1996). Effective strategies for reducing disease and disability are widely underused. Preventing disease, limiting disability, and improving the quality of life for older Americans through collaborative community-based programs have proven successful in a

variety of settings (Lutz, Herrick, & Lehman, 2001; Moyer, Coristine, MacLean, & Meyer, 1999; Slaninka & Galbraith, 1998). By capitalizing on current research strategies, and employing novel methods, our program aims to meet the needs of an at-risk population of senior adults.

BACKGROUND

The Escalante Health Partnerships is a community-based, nurse-managed health promotion and wellness center that provides services for a suburban, multigenerational, multiethnic, lower-socioeconomic-status community. The Partnership was developed by its elder health and family health coalitions: ElderCARE (Community Action to Reach the Elderly) and TACH (Tempe Alliance for Community Health), respectively. This article will discuss the elder health program.

The Escalante Health Partnerships was initiated in 1991 when representatives from the state university college of nursing, the local health department, and the community action agency (the social service crisis network) collaboratively addressed the health needs of older adults in the neighborhood around the local community center (Escalante). A coalition was formed with the initial mission of addressing the health, safety, and support needs of elders through nontraditional collaboration within the community. The goal was to integrate the health, social service, and other networks to provide a community-based continuum of care that fostered independence for older adults. Coalition membership was quickly and successfully expanded to include the community hospital, the city community council, local businesses, law enforcement, and other senior service providers such as adult day health care and the local chapter of the Area Agency on Aging. The coalition began its process of jointly assessing community needs and providing services immediately and continuously, primarily through the staffing and resources provided by the diverse partners. Despite the coalition's lack of significant financial support, the resources and resourcefulness of the partners enabled the initial pilot services to be developed into a dynamic outcome-oriented health promotion and chronic disease care management program serving more than 500 older adults annually.

Initial funding for the program came from local partners in support of primary health promotion service delivery. Since that time, the original partnership has developed into a dynamic university-community partnership practice model involving community organizations in program planning, health promotion, and primary care services while further educating health professionals. This model provides high-quality health promotion and

disease prevention in a uniquely cost-effective manner because of the strength and commitment of the collaborating partners. University faculty and health care and wellness professionals provide services as part of their community practice role. The center serves as a clinical preceptorship site for graduate and undergraduate students in a variety of health, nutrition, exercise science, and social service professions. The program base is a multidisciplinary, faculty practice model that has responded to the health needs of a community at high risk of having or developing chronic conditions. This population, for many socioeconomic and cultural reasons, lacks the opportunity for health promotion, early detection of disease, and chronic care management. This program partnership is a model that can be replicated cost-effectively in other communities.

The majority of the 1,400 older adults in the Escalante area are women who live alone and report annual incomes below \$6,000. A sample of these women studied ($N = 101$) reported lower levels of physical functioning than another Arizona sample of more-affluent, white women ($N = 110$) (Gale & Templeton, 1995; Gale & Erickson, 1997). In addition, a sample of men and women ($N = 60$) who attend the Escalante senior center report lower levels of physical function (according the Medical Outcomes Survey (MOS) questionnaire) than age-matched U.S. population norms (Ware, Snow, Kosinski, & Gandek, 1993; Gale, 1998).

A certified adult nurse practitioner, a program director, a program administrator, an exercise physiologist, a social worker, and several paid graduate students in nursing and exercise science staff the Escalante Health Partnerships. Collaborating partners include a family practice physician, a podiatrist, and numerous volunteers, students, and health and social work professionals from the partner organizations. The health program has recently expanded its services to three neighboring senior center facilities as satellite programs. Creative cooperation agreements have been developed outlining the basic mechanisms needed to provide liability coverage and to subcontract grant monies for specific purposes within the partnership.

INTERVENTION

Primary outcomes of the health program are to improve or maintain the functional health of seniors, enabling them to live independently for a longer period of time and to improve their quality of life by assisting in the self-management of chronic diseases known to debilitate the elderly. The activities and services offered in the health program strive to meet the *Healthy People 2010* goals for older Americans and locally identified needs based on ongoing community assessments. All programs are held

at the senior center and, with the exception of podiatry services, are free to the participants.

The total program consists of three general categories of activities.

health promotion, consumer health education, and self-management of chronic disease periodic health screenings and follow-up individual services

The health promotion activities consist of group fitness programs designed to meet the needs of the frailest to the most robust senior participant. The university exercise and wellness department coordinates a comprehensive, individualized strength-training (weight-lifting) program. Additional programs include a falls prevention balance and toning class, a PACE[®] arthritis exercise session, a Tai Chi video-instructed class, and daily partner walking. Our research supports the existing literature that shows that social environment and practitioner-prescribed exercise encourage seniors to be more active in ways that meet their activity level and personal style or preferences (Stahl, Rutten, Nutbeam, Bauman, & Kannas, 1992; Melillo, Houde, Williamson, & Futrell, 2000; Carlson, Ostir, Black, Markides, & Rudkin, 1999; Wolfson, Whipple, Derby, Judge, King, Amerman, Schmidt, & Smyers, 1996).

Several health education sessions are offered each month in one or more of the areas of nutrition, health care consumer education, first aid and safety, and health promotion and disease prevention. Some of the key issues addressed may include, for example, how to talk to your doctor, humor and health, and the aging process. Disease prevention or self-care management sessions may focus on issues such as medication management, arthritis, or stroke prevention.

Health screenings and follow-up interventions tie in closely with the program's health education and outcome goals. Hypertension screening occurs twice monthly and is also available daily as needed by the nurse practitioner on site. During this interaction, individuals can discuss their blood pressure concerns and lifestyle issues and address medications taken. Ongoing collaboration between clients' primary health care providers (PCPs) and the health program nurses facilitates improved care and health outcomes for at-risk individuals while lessening the burden on the health care system.

Communitywide cholesterol and diabetes screenings are offered every six months, as is ongoing follow-up of clients with known disease. During all screenings, referral, education, and scheduled follow-up are provided to assist clients with diet, activity, and lifestyle changes. These interventions have proved successful in helping clients remain within the recommended guidelines for health. In the past year, a comprehensive diabetes early detection and self-care management component has been initiated

to provide older clients with the time-intensive assistance often needed for improved health outcomes. A similar self-care management module targeting arthritis is currently being developed.

Because of changes in vision and mobility difficulties the availability of simple podiatry services have been identified as an ongoing need of the elderly. A podiatrist provides services on site every two months for \$5 a visit. The nurse practitioner provides routine care and follow-up every other month, free of charge. The volunteer organizational partners offer screenings for depression, hearing, vision, and glaucoma; consultation and education for cancer; and massage therapy as ongoing community services. The program nurses coordinate all follow-up and referrals.

Since the programs' inception, a comprehensive research agenda has been vital to the outcomes evaluation and ongoing funding aimed at determining older adults' functional health and quality of life. Baseline comprehensive health assessments are conducted using the tools described in the following sections. From these assessments, an individualized wellness plan is developed to address the health risks identified and provide ongoing support, education, and follow-up. Individual counseling, physical exams, referral, and primary care provider collaboration are all part of the nurse practitioner's role in working with older adults in this community setting.

METHOD

For this study, the criteria for selection were age of 50 and older, community-residing within the city, and willingness to participate in a wellness program.

The participants in the health program are community members who attend the Escalante Senior Center. The Senior Center provides a hot lunch and socialization program for independently living senior adults. The health promotion office is located within the center, which facilitates daily interaction between clients and health professionals. Clients experience a variety of chronic conditions commonly found in those aged 65 and older, such as diabetes, hypertension, cardiovascular disease, hyperlipidemia, stroke, arthritis, osteoporosis, cancer, emphysema, depression, impaired vision/hearing, and chronic pain. Certain conditions are problematic for this community and are detailed in the following sections.

Health program participants are 56 to 98 years old and include 36 men (26.7%) and 99 women (73.3%). The mean age is 76 with a standard deviation (*SD*) of 8.5 years. Only 9.6% of the participants are aged 55 to 64. The majority are aged 65 to 74 (33.4%) and 75 and older (57%). The dominant ethnic group is white (82.2%), then Hispanic (9.6%) and African American

(3%). On average, participants reported 11.8 years of formal education (*SD* = 3.7), with 1 year and 20 years as the extremes. Fifty percent of the participants are widowed. More than half of the participants (66.7%) are living in a household with others, and 32.6% are living alone. Most participants (63.7%) chose not to report their monthly income, but, of those who responded, 44.9% gave a monthly income between \$500 and \$999.

PROCEDURE

Once clients are referred to the senior center, a face-to-face interview is conducted. After explaining and signing a consent form and completing a sociodemographic form, a short cognitive assessment is given to participants to evaluate their ability to understand the interview questions. Once evaluated, a health survey and a health risk assessment questionnaire are administered.

INSTRUMENTS

The instruments used in this program are the 36-item Short-Form health survey (SF-36) (Medical Outcomes Trust, 1996; Stewart & Ware, 1992; Ware & Sherbourne, 1992) and the senior version of the health risk assessment from LifeStyle Directions, Inc. (Lifestyle Directions, 1985). The SF-36 was developed to provide practical and valid measures of health status and outcomes from the client's point of view. The instruments' standardized scoring system (with scales ranging from 0 to 100) yields a profile of eight health scores and indicates self-evaluated change in health status. The eight health concepts measured by SF-36 are (1) limitations in physical activities because of health problems, (2) limitations in usual role activities because of physical health problems, (3) bodily pain, (4) general health perceptions, (5) vitality (energy and fatigue), (6) limitations in social activities because of physical or emotional problems, (7) limitations in usual role activities because of emotional problems, and (8) mental health. In addition, there are the SF-36 Physical Component Summary (PCS) and Mental Component Summary (MCS) scales, which reflect the physical and mental dimensions of health status (Ware et al., 1994). The SF-36 has been used and validated in many different populations and adapted and translated for many countries, including Sweden, the United Kingdom, and Germany (Medical Outcomes Trust, 1996). The validity of the physical and mental health scales was found to be independent of medical and psychiatric conditions of the sample population. Overall, for the general U.S. population, the reliability of the physical functioning scale and the mental health scale is 93% and 84%, respectively (Ware et al., 1993). For use

with elderly populations, Lyons, Perry, & Littlepage (1994) reported a Cronbach alpha range from 0.82 to 0.94 (average 0.88), indicating a high degree of internal consistency.

The Senior Health Risk Appraisal (Senior HRA) (Lifestyle Directions, 1985) is an adaptation of the Healthtrac questionnaire (Leigh et al., 1992; Fries et al., 1993; Nitzkin, 1999) and the Health Assessment Questionnaire (Ramey, Raynauld, & Fries, 1992), which are extensively validated and widely used instruments. Major components are exercise, smoking, alcohol intake, and sleep habits; dietary habits such as fat, salt, fruit, and fiber intake; stress and coping with stress; functional health as measured in ADLs and instrumental activities of daily living (IADLs); disease prevention and screening behaviors; medical history; blood pressure, cholesterol, and glucose levels; body mass index; and falls, car accidents, health care provider use, and hospital stays.

RESULTS

The results from the SF-36 interviews of this initial group of participants are displayed in Table 1. The average score for physical functioning was 64.8. A person with a low score is limited in performing all physical activities, including bathing or dressing, because of health. A person with a high score performs all types of physical activities, including the most vigorous, without limitations due to health. For bodily pain, the average score was 65.2. Here, a low score indicates severe and extremely limiting pain, whereas a perfect score indicates no pain or limitations due to pain. The average score for vitality was 57.9. Here, a low score indicates feeling tired and worn out all of the time, whereas a high score indicates feeling full of energy all of the time. The average score for social functioning was high (82.4), which indicates normal social activities without interference due to physical or emotional problems. For mental

TABLE 1. *SF-36 Health Survey Scores: Adjusted Means and Standard Deviations (SD) (N = 135)*

Scale	Mean	SD	Range
Physical Functioning	64.8	27.0	5–100
Role—Physical	62.6	39.5	0–100
Bodily Pain	65.2	25.4	0–100
General Health	66.1	21.9	5–100
Vitality	57.9	22.6	0–100
Social Functioning	82.4	24.2	0–100
Role—Emotional	77.3	35.4	0–100
Mental Health	76.6	18.4	24–100
Physical Component Summary	42.1	10.5	16–60
Mental Component Summary	52.7	10.2	23–73

TABLE 2. *SF-36 Health Survey Scores: Adjusted Means by Age Group and National Norms*

Scale	Mean Age 65–74 (N = 45)		Age ≥75 (N = 77)	
	Mean	National Mean	Mean	National Mean
Physical Functioning	71.2	69.3	61.5	53.2
Role—Physical	70.0	64.5	58.1	45.3
Bodily Pain	68.6	68.5	63.4	60.9
General Health	70.2	62.6	63.7	56.7
Vitality	63.3	59.9	55.0	50.4
Social Functioning	86.7	80.6	79.9	73.9
Role—Emotional	79.3	81.4	77.5	63.2
Mental Health	78.1	76.9	77.1	74.0

health, the average score was 76.6. Here, a low score indicates feelings of nervousness and depression all of the time, whereas a high score indicates feeling peaceful, happy, and calm all of the time. PCS reflects physical morbidity and etiology (p. 7 : 2, Ware, Kosinski, & Keller, 1994). The average score was 42.1. A high score indicates no physical limitations, disabilities, or decrements in well-being, a high energy level, and excellent health. MCS reflects psychological or mental morbidity and etiology (p.7 : 2, Ware et al. 1994). The average score was 52.7. Here, a high score indicates frequent positive affect, absence of psychological distress or limitations in usual social/role activities due to emotional problems, and excellent health.

Comparisons of adjusted means by age group with the national norms are shown in Table 2. For those aged 65 to 74, all scales were at or above the national mean, with the exception of role-emotional, which was slightly lower than the national peer group. For participants aged 75 and older, all areas were well above national norms (Ware et al., 1994).

As can be seen from Table 3, all the variables of the SF-36 scales were significantly correlated with each other. These findings indicate that older adults who were able to perform normal social activities without interference due to physical or emotional problems also felt full of energy. They report feeling peaceful, happy, and calm all of the time, and evaluate personal health as excellent. It also implies that older adults whose social activities were extremely restricted due to physical or emotional health problems felt tired and worn out all of the time, were nervous and depressed all of the time, and evaluated their personal health as poor. In addition, older adults with lots of energy were better able to perform all types of physical activities, including the most vigorous, without limitations due to health.

TABLE 3. Correlations Among SF-26 Scales (N = 135)

Variable	1	2	3	4	5	6	7	8	9	10
1. Physical Functioning	—									
2. Role—Physical	0.46*	—								
3. Bodily Pain	0.39*	0.45*	—							
4. General Health	0.53*	0.54*	0.40*	—						
5. Vitality	0.52*	0.46*	0.38*	0.54*	—					
6. Social Functioning	0.33*	0.49*	0.37*	0.37*	0.37*	—				
7. Role—Emotional	0.24*	0.43*	0.42*	0.35*	0.33*	0.45*	—			
8. Mental Health	0.29*	0.41*	0.42*	0.46*	0.47*	0.45*	0.72*	—		
9. Physical Component Summary	0.83*	0.73*	0.62*	0.70*	0.56*	0.38*	0.17	0.21	—	
10. Mental Component Summary	0.09	0.34*	0.33*	0.35*	0.49*	0.61*	0.85*	0.88*	0.03	—

* $p \leq 0.001$.

TABLE 4. Senior HRA: Major Health Risks

Category	Baseline (N = 47)
Exercise (times/week), M	3.7
High dietary fat, %	12.8
Body mass index, ^a M	28.0 kg/m ²
Total cholesterol, M	203.8 mg/dL
Blood pressure in hypertension ^b range, %	47.7
Stage 1, mild, %	29.5
Stage 2, moderate, %	15.9
Stage 3, severe, %	2.3
History of heart disease, %	63.8
History of heart attack, %	48.9
History of diabetes, %	63.8
Hospital stay, days/year	1.6
Health care provider, visits/year	4.2
Hand weakness, %	27.7
Poor eyesight, %	53.2
Difficulty hearing, %	40.4
Memory problems, %	38.3
Falls in past year, %	46.8

^aNational Institutes of Health, National Heart, Lung, and Blood Institute.^bNational Institutes of Health, National Heart, Lung, and Blood Institute (1997). *Sixth Report of the Joint Committee on Detection, Evaluation, and Treatment of High Blood Pressure* (Publication no. 98-4080). Washington, DC: U.S. Government Printing Office.

Results from the Senior HRA are summarized in Table 4. The health risk data demonstrate that, with an average BMI of 28.0 kg/m², nearly 39% of participants are overweight (BMI of 25.0–29.9 kg/m²) and an additional 26.5% are obese (BMI of ≥ 30 kg/m²). Of the participants with known hypertension ($n = 13$), the following data groups the clients into established categories (National Institutes of Health, 1997): Stage 1 (54.5%),

Stage 2 (27.3%), and Stage 3 (15.9%). No participant had Stage 4 hypertension. In the health history, participants reported conditions in self, family member, or self and a family member. A history of past heart attack (48.9%) and heart disease (63.8%) is quite prevalent. Also, participants reported difficulties with hearing (40.4%), 53.2% had poor eyesight, and 46.8% reported falls within the past year.

DISCUSSION

The participants in this sample share characteristics with the demographic profiles of samples in the literature. The ages of the participants in this sample ranged from 56 to 98. Their age range was similar to the age ranges in other studies (Whittle & Goldenberg, 1996; Gale, 1993; Gale & Templeton, 1995). The sociodemographic data were characteristic of a multiethnic, low-income neighborhood such as the one most of the participants in this group lived in. It is interesting to note that the strongest correlation here is between general health and vitality and between general health and role-physical. In other words, preliminary comparisons of the health status of the Escalante health program participants with national norms demonstrate that Escalante seniors report better general health, performance of roles, and social functioning. In addition, preliminary results from the Senior HRA data indicate that these participants have 4.2 doctor visits per year, in comparison with 7.1 office visits for a national comparison group and 1.6 hospital days per year, in comparison with 2.1 hospital days in the same referenced population (National Center for Health Statistics, 1997).

CONCLUSION

The Escalante Health Partnerships program has a successful nine-year history providing outcome-oriented health promotion and chronic disease care management to a group of high-risk senior adults. The research

demonstrates that this type of community collaboration can promote health behaviors and self-care disease management, maintain functional independence, and improve quality of life measures in participants who report a high number of chronic or debilitating conditions. This practice collaboration can be cost-effectively replicated in other similar communities, alleviating the burden on the health care system and enhancing the overall health of the community.

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