ment, their biologic, socioeconomic, and behavioral determinants, and their impact on survival. The National Cancer Institute is currently conducting a multicenter investigation of Black/White cancer survival differences that will further our understanding of these issues.

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Factors Associated with Participation in a Community Senior Health Promotion Program: A Pilot Study

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Abstract: Factors associated with participation in a community senior health promotion program were studied in 103 participants and a population-based control group of 531 non-participants. Compared to controls, participants had similar physical health status, but lower mental and social health status. Both men and women participants reported more depressive symptoms, lower positive affect, and lower social participation. Mental and social health may be important yet under-studied factors influencing participation in community health promotion programs. (*Am J Public Health* 1989; 79:775–777.)

Introduction

The results of large health promotion/disease prevention (HPDP) research projects[1–8] suggest HPDP programs attract relatively healthy persons in higher socioeconomic groups. But little is known about factors influencing participation in the community-based programs unaffiliated with a major research project—the setting in which the majority of health promotion/disease prevention programs presumably must occur. Also, few HPDP programs have studied recruitment of elderly subjects. For these reasons, we studied factors associated with participation in a community-based, senior health promotion program sponsored by a large health maintenance organization (HMO).

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Methods

The study was conducted at Group Health Cooperative of Puget Sound (GHC), a large, closed panel, not-for-profit HMO in western Washington State. The health promotion/disease prevention (HPDP) program (Growing Healthier) was intended for a broad target population of older adults and was advertised through the GHC magazine mailed to all enrollees, brochures distributed at GHC clinics, and presentations to consumer groups. The program was described as an opportunity to "enjoy life more" and "take greater control of your health and future." The curriculum consisted of a 10-week series of lectures, group discussions, and skills demonstrations led by trained instructors and senior volunteers. Specific topics covered included exercise, nutrition, stress management, social support, and self-responsibility/self-assertiveness.

Study participants were 103 (98 per cent) of the first 105 older adults (age 55+) to enroll in the Growing Healthier program given in the fall of 1984 at three of the 21 HMO clinics. Controls were 531 respondents (age 55+) to a survey of a stratified random sample of HMO enrollees (response rate = 90 per cent) and did not attend the program. For the analysis, control data were weighted to approximate a simple random sample.

The sources and/or definition of the independent variables used in this study are shown in Appendix I. Odds ratios assessed the association between program participation and subject characteristics. For consistency, variables with more than two levels were collapsed down to two categories. Adjustment for potential confounders was done using logistic regression.

Results

Table 1 describes the demographic characteristics of the study sample. Almost all study subjects were White. Compared to controls, participants were older, better educated, and reported higher incomes.

TABLE 1—Demographic Description of Study Participants and Control Group[a]

Variables	Men		Women	
	Participant N = 30	Control N = 235	Participant N = 73	Control N = 296
	%	%		
Age (years)				
55–64	23	52	34	49
65–74	63	35	55	34
75+	14	13	11	17
Race				
White	97	94	99	97
Other	3	6	1	3
Income				
<$15,000	23	41	32	54
$15000–25,000	15	32	32	26
>$25,000	62	27	36	20
Education				
<High School	13	32	8	30
High School	27	25	19	30
Some College	60	43	73	40
Marital Status				
Married	70	80	65	51
Other	30	20	35	49
Living Situation				
Lives Alone	21	16	30	39
with Spouse	76	79	68	52
Other	3	5	2	9

[a]Control data adjusted so that it reflects a simple, random sample of HMO enrollees over age 54 (actual sample was a random sample stratified by age).

Participants and controls differed on several study variables (Table 2). Use of seat belts and owning smoke alarms were associated with participation, but owning home fire extinguishers and refraining from drinking prior to driving were unrelated to participation. Lifestyle was associated with participation differently for men and women. Exercise and non-smoking were more strongly associated with participation in men. Obesity and abstinence from alcohol tended to be associated with participation for men, but with non-participation in women.

The health status of the participants and controls did not differ significantly as measured by self-perceived general health or by the Alameda Health Status scale (a measure of physical health). Varying the cut points on these scales in the statistical analysis did not change this result.

The mental and social health status of both men and women participants were lower than controls. Participation rates were substantially higher in persons with low positive affect, low emotional ties, high depressive symptoms, and low social participation. Low social support was not as strongly associated with participation. With the exception of emotional ties, findings were consistent between men and women.

Adjustment for education, income, marital status, and residential status had little effect on results, even though education in particular was associated with participation (age- and sex-adjusted odds ratio = 1.5, 95% confidence interval = 1.3, 1.8). This suggested the observed differences between participants and controls were not simply a reflection of the higher socioeconomic status of participants.

Discussion

Several findings of this study were unanticipated. First, associations of lifestyle factors with participation appeared to differ according to sex. Second, the general and physical

TABLE 2—Comparison of Participants in a Senior Health Promotion Program with Controls

	Men					Women					All[b]	
	Participant N = 30	Controls[a] N = 235	OR	Age-Adjusted OR	(95% CI)	Participant N = 73	Controls[a] N = 296	OR	Age-Adjusted OR	(95% CI)	Age/Sex-Adjusted OR	(95% CI)
	%	%				%	%					
Lifestyle												
Non-smoker	97	79	7.5	6.3	(.95,48)	94	84	3.1	2.9	(.98,8.8)	3.6	(1.4,9.5)
Non-drinker	43	25	2.2	1.9	(.87,4.4)	25	36	0.6	.53	(.29,.98)		
Regular Exercise	50	18	4.5	4.4	(1.9,10)	31	23	1.5	1.5	(.76,2.8)	2.2	(1.3,3.6)
Overweight by >20%	26	17	1.7	1.8	(.70,4.7)	17	24	.65	.62	(.31,1.2)		
Home/Car Safety												
Home Smoke Alarm	93	82	3.0	2.9	(.66,13)	95	83	3.5	3.2	(1.1,9.3)	3.1	(1.3,7.5)
Home Fire Extinguisher	69	67	1.1	1.2	(.51,2.7)	58	56	1.1	1.1	(.62,1.8)	1.1	(0.7,1.7)
Regular Seat Belt Use	73	46	3.2	3.0	(1.3,7.0)	66	49	2.0	1.9	(1.1,3.3)	2.2	(1.4,3.5)
Drinking Driver	23	27	.83	1.1	(.42,2.9)	5	7	.71	0.9	(.23,3.4)	.95	(.44,2.1)
Health Status–General												
Good/Excellent Health	83	78	1.4	1.5	(.56,4.3)	86	84	1.2	1.4	(.67,3.0)	1.4	(.80,2.6)
Health Status–Physical												
Low Alameda Score	83	72	2.0	1.7	(.63,4.8)	80	76	1.2	1.3	(.66,2.5)	1.4	(.81,2.4)
Heart Problems	13	14	.97	.88	(.28,2.7)	12	8	1.6	1.3	(.53,2.9)	1.1	(.55,2.1)
Diabetes	1	10	.14	.27	(.04,2.2)	7	11	.65	.58	(.21,1.5)	.40	(.16,1.04)
Emphysema	10	7	1.7	1.5	(.41,5.5)	6	6	1.1	1.1	(.33,3.2)	1.2	(.51,2.8)
Arthritis	43	30	1.8	1.8	(.83,4.0)	60	53	1.4	1.3	(.73,2.2)	1.4	(.91,2.3)
Health Status–Mental												
Low Positive Affect	44	26	2.3	2.5	(1.1,5.7)	41	27	1.9	1.9	(1.1,3.3)	2.1	(1.3,3.3)
High Depression Symptoms	43	21	2.7	2.6	(1.2,6.0)	45	27	2.2	2.1	(1.2,3.7)	2.3	(1.4,3.6)
Low Emotional Ties	52	50	1.1	1.2	(.57,2.7)	66	36	3.4	3.5	(2.0,6.2)		
Health Status–Social												
Low Social Support	36	28	1.4	1.5	(.64,3.5)	40	32	1.4	1.5	(.87,2.5)	1.5	(.93,2.3)
Low Social Participation	63	45	2.1	2.2	(1.02,4.9)	70	52	2.1	2.1	(1.1,3.7)	2.2	(1.3,3.4)

OR = Odds Ratio
95% CI = 95% Confidence Intervals
[a]Control data adjusted so that it reflects a simple, random sample of HMO enrollees over age 54 (actual sample was a random sample stratified by age).
[b]Summary odds ratio provided if strength of association similar for men and for women.

health of participants were no better than that of controls; although a lack of power or of sensitivity in the measurement scales could explain this result, in several measures of physical health the trends were for participants to be less healthy than controls. Third, participants had significantly lower mental and social health status, although not so low as to imply major social or psychological problems. As Growing Healthier targeted (in part) older adults wishing to improve their mental and social health, this finding is a notable exception to the usual situation of difficulty reaching a HPDP target population.

In contrast, participants in large HPDP research projects have often been physically healthier,[1,7] and the few available data suggest participants also tend to be socially and mentally healthier.[1,5,8] Perhaps factors which influence participation in large HPDP research projects differ from those in small community HPDP programs. Indeed, community programs lack several potential barriers to participation found in research studies (e.g., chance of randomization to a control group, burden of data collection, commitment to long-term follow-up).

But additional research is necessary to appraise the generalizability of these results. Factors influencing participation are to some extent program specific,[9] so some differences among programs are expected. As health status measures of this study were chosen because they were short and self-administered, research is needed using more comprehensive measures measuring a variety of aspects of mental and social health. Also, about three-fourths of participants received their medical care from the three clinics where the Growing Healthier program was given. Our data lacked clinic identifiers for participants, so we could not exclude the possibility that differences between participants and controls were due to differences between these three clinic sites and other HMO clinics. However, analysis of control data did not suggest these three clinics differed systematically from other HMO clinics on study variables.

In summary, mental and social health status may be important determinants of participation in community-based HPDP programs. Community HPDP programs should consider the potential importance of their mental and social health content. HPDP program evaluations should include social and mental health status measures. Of interest is whether program efficacy and effectiveness vary according to the mental and social health status of participants.

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APPENDIX I

Definitions of Independent Variables

Variables	Definition
Lifestyle	
Non-smoker	Not currently smoking cigarettes[10]
Non-drinker	No alcohol use in the past year[10]
Regular Exerciser	At least 20 minutes of exercise three times a week[10]
Overweight by >20%	Present weight greater than 120% of ideal body weight according to Metropolitan Life Tables
Home/Car Safety	
Home Smoke Alarm	Smoke alarm(s) installed in the primary residence
Home Fire Extinguisher	Fire extinguisher present in the primary residence
Regular Seat Belt Use	Seat Belts usage reported as always or almost always (as opposed to never, rare, or sometimes)
Drinking Driver	Consumption of more than two drinks prior to driving an automobile in the past year[13]
Health Status–General	
Good/Excellent Health	Self-perceived health status was good or excellent (as opposed to fair or poor)
Health Status–Physical	
Low Alameda Score	Score of 1 to 4 on Alameda Health Status scale, indicating presence of at least one chronic medical condition (range of possible scores: 1 to 7)[12]
Heart Problems	Self-report of "heart trouble" in past year
Diabetes	Self-report of "diabetes" in past year
Emphysema	Self-report of "emphysema or chronic bronchitis" in past year
Arthritis	Self-report of "arthritis or rheumatism" in past year
Health Status–Mental	
Low Positive Affect	Score of 41 to 60 on Positive Affect Scale (ten questions, range of possible scores: 10 to 60)[11]
High Depression Symptoms	Score of 9 to 23 on Depression Scale (four questions, range of possible scores: 4 to 23)[11]
Low Emotional Ties	Score of 2 to 9 on Emotional Ties scale (two questions, range of possible scores: 2 to 12)[11]
Health Status–Social	
Low Social Support	Score of 4 to 7 on Social Support Scale (three questions, range of possible scores 1 to 7)[13]
Low Social Participation	Score of 2 to 3 on Social Participation Scale (two questions, range of possible scores: 0 to 3)[13]