

Urban Ethnic Minority Women's Attendance at Health Clinic vs. Church Based Exercise Programs

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Abstract Older, sedentary, urban-living, ethnic minority women are at high risk for preventable disease, but it is difficult to engage this population in health promotion efforts. This study tested two methods of engaging Hispanic and African American women, who were at high risk for cardiovascular disease, in a 10-week aerobic fitness program. The program was offered to 76 participants, in either a women's health clinic or a church. Attendance was the primary dependent variable and was recorded at each exercise session. Other variables, including the Baecke Questionnaire of Habitual Physical Activity, Fat Frequency Questionnaire, Self-Efficacy for Exercise Behaviors Scale, Social Support and Exercise Survey, and Psychological General Well-Being Schedule, were measured prior to the intervention, at the end of the 10-week program, and at 3-month follow-up. Age predicted attendance, independently of site. Women in the highest age quartile (50 - 70 years) attended more than twice as many exercise sessions compared to women in the lowest age quartile (17 - 27 years). The relationship between older age and attendance was particularly strong for Hispanic women. Church parishioners were primarily women over the age of 40, making it impossible to disentangle the relative effect of locale. These findings are relevant for clinicians who design exercise programs targeting older, ethnic, minority women. Administrators who design exercise programs for urban-living women should consider age of the target population when selecting the most conducive setting.

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Introduction

Many hospitals, community health agencies and health departments seek to provide health promotion programs within their community and to disparate and underserved populations. However, it is difficult to determine the ideal location for such programs and the best methods to engage participants. Implementing a health promotion program that is under-attended or has high attrition rates is both demoralizing to the organizers and costly. It appears that program design factors, for example, recruitment efforts tailored to the target population, have a significant impact on the participation of disparate populations in health promotion efforts (Warren-Findlow, Prohaska, & Freedman, 2003).

Places of worship are traditionally underutilized for the purpose of health promotion. Because they offer strong networks of social support, and social support correlates strongly with adherence to exercise (Neumark-Sztainer, Kaufmann, & Berry, 1995), churches and other places of worship could be good sites for health promotion programs and particularly fitness programs. This study evaluated an identical fitness program offered both in Spanish and English at two different kinds of locales, a women's health clinic located at a hospital, and at two churches—to examine the effect of locale on attendance. Churches were chosen as sites for the exercise program, based on the rationale that knowledge of the social structure of the church and long-term ties would make urban, ethnic-minority women more comfortable in this setting. In addition to program site, the study examined attendance as a function of age, ethnicity and other demographic variables that could affect program participation.

Materials and Methods

Sample selection and screening

The study evaluated women's participation in a 10-week (20 session) exercise program. Participants were recruited from a Spanish speaking church ($n=23$), an African American church ($n=30$) and a women's health clinic ($n=23$). Of the 76 participants, 37 spoke Spanish and 39 were African American women who spoke English. Adult women who were not pregnant and were not engaged in regular exercise regimen were eligible to participate.

The clinic-based exercise programs were held at a women's health clinic at Hartford Hospital in Hartford, CT. Volunteers were recruited through flyers placed throughout the clinic and health care providers were provided with information with which to refer interested women. The clinic has approximately 26,000 outpatient visits per year. Demographic characteristics for the clinic patients are: mean age of 24 years; 65% are Hispanic (predominantly Puerto Rican), 15% are black and 20% are white. Of Hispanics, 35% describe themselves as multi-racial and 65% describe themselves as white. The majority (63%) have not completed high school. Recruiting materials were provided in English and Spanish and the flyer described a research study that featured a free aerobics class and was funded by the American Heart Association, Heritage Affiliate.

The church-based programs were held in the church basements of a predominantly African American Baptist and a predominantly Hispanic Catholic church both located in Hartford. In this setting, the church leader and an interested parishioner spoke about the

program to the congregation at church services, handed out flyers and identified potential participants through personalized recruiting efforts.

Baseline medical information was collected and reviewed by the study coordinator and a cardiologist who oversaw the study. Participants were not screened out; however, fitness instructors provided participants with modified versions of each exercise such as low-impact aerobic exercise tailored to the individual's level of fitness, that participants could choose from if needed.

Measures

All subjects were assessed at baseline (1 week prior to beginning the exercise program), at the end of the intervention (10 weeks post-baseline) and 3 months after the last session of the exercise program. The primary dependent variable was attendance recorded at each session by the exercise instructor. Weight, waist–hip ratio and blood pressure were measured by trained research assistants. History of coronary artery disease, stroke, hypertension, diabetes, cancer, respiratory disease, alcohol use, cigarette smoking, chest pain or leg cramps upon exertion and current medications were assessed by self-report. Other variables measured included demographic characteristics (age, ethnicity, marital status, educational level, employment and health insurance).

Exercise was measured with the Baecke Questionnaire of Habitual Physical Activity, a self-report measure (Baecke, Burema, & Frijters, 1988). Dietary fat consumption was measured using the Fat Frequency Questionnaire (Block, Clifford, Naughton, Henderson, & McAdams, 1989). The Self-Efficacy for Exercise Behaviors Scale (Sallis, Pinski, & Grossman, 1988) was used to measure confidence in ability to start and maintain an exercise regimen. The Social Support and Exercise Survey (Sallis, Pinski, & Grossman, 1987) was used to measure social support from family and friends for exercise. The Psychological General Well-Being Schedule (Dupuy, 1984) measured overall psychological well-being, with subscale scores for anxiety, depressed mood, positive well-being, self-control, general health and vitality. Program satisfaction was measured at the end of the program, using Likert-scale items assessing satisfaction with the instructor, time, location and the overall program.

Intervention

The intervention took place 2 days per week for 10 weeks and consisted of 50 min of moderate intensity dance aerobic activity using culturally appropriate music, movements, and language. Fitness instructors chose an array of music and aerobics moves for participants that were primarily salsa sounds and moves for the Hispanic classes and primarily Samba sounds and moves for the African American classes. The classes for Hispanics were held in Spanish. There were two clinic classes, one held in English and one in Spanish. Moderate intensity was defined as an intensity that corresponds to 64–76% of maximal heart rate.

Each session began with a motivational/spiritual reading, followed by a 5-min warm-up period, 25 min of aerobic activity, 10 min of resistance training, and a 10-min stretching/cool-down period. The motivational/spiritual readings were typically chosen by the participants and were not the same for each group.

Instructors

All classes were taught by experienced certified fitness instructors. There were four instructors, three women and one man, all Caucasian and in their early to mid 30s. All had

extensive experience in teaching different modalities of exercise, including low-impact aerobic exercise, and one was fluent in Spanish as well as English. All classes for a given group were taught by the same instructor, and each instructor taught one class at the clinic and one class at a church.

Results

Descriptive data

One hundred six individuals agreed to participate in the exercise program. Of the 106, 76 women actually started the program. Non-starters ($n=30$) were compared with participants ($n=76$); but there were no significant differences between groups for any of the baseline variables. The ethnicity of the sample was: Hispanic (48%), African American (46%), Multi-ethnic/Other (6%). Participants ranged in age from 17 to 70 (median=40 years); 81% were high school graduates; 41% had never married, 80% were employed and all but one of the participants had one or more children. The mean number of exercise sessions attended was 7.55 ($SD=5.73$). Overall health (self-rating) was rated “good” for 79% of the sample. Mean blood pressure was 127/78, mean weight was 176.5 lb ($SD=39.64$). Twenty-eight percent of participants reported that they had hypertension, asked with the item “Have you been told by a health care provider that you have high blood pressure?” with 14.5% taking medication to treat blood pressure; 18.4% had asthma or respiratory problems, 8% had diabetes and 6.7% were current smokers.

Main effects on participants’ attendance

Analysis of variance (ANOVA) was used to examine the relationship of ethnicity and type of site to the number of exercise sessions attended. The ANOVA showed a significant effect for site ($p=0.013$) and a non-significant effect for ethnicity and for the ethnicity by site interaction. However, when either age or systolic blood pressure was entered as a covariate in this analysis, the site effect was non-significant, suggesting that these variables were confounded. The apparent main effect of site on attendance can be explained by the overlap of age with sites—few health clinic participants (2/23) were over age 40 whereas most (37/53) church participants were in this older age category.

Both logistic and standard multiple regressions done with attendance coded as a dichotomous and continuous variable, respectively, showed that age was the only significant factor, of those examined, that was *independently* related to attendance. Table I depicts attendance by age (in quartiles). The oldest age category of women (age 50–70 years) attended more than twice the number of exercise sessions ($M=10.45$, $SD=4.49$) compared to the youngest age category of women age 17–27 years ($M=4.88$, $SD=5.04$). The age-attendance correlation was stronger among Hispanic, compared to African American participants.

Diastolic blood pressure, use of blood pressure medications, current smoking, and asthma/respiratory problems had marginally significant correlations with attendance. Fat consumption was inversely correlated with both age ($r=-0.30$, $p=0.012$) and attendance ($r=-0.23$, $p=0.05$), but the key variable was age—that is, younger people attended fewer sessions and also consumed more fatty foods.

Other baseline variables (ethnicity, education, frequency of home exercise, employment status, self-ratings of health, number of children, marital status, language, weight) and self-

Table I Mean Exercise Sessions Attended, By Age Quartiles And Site

Site		Clinic Hispanic	Clinic Af Am	Church Hispanic	Church Af Am	All sites
Age quartile:						
17–27	<i>M</i>	6.13	1.00	6.67	9.00	4.88
	<i>n</i>	8	5	3	1	17
28–39	<i>M</i>	4.25	12.50	6.29	3.80	6.50
	<i>n</i>	4	4	7	5	20
40–49	<i>M</i>	<i>no data</i>	<i>no data</i>	8.88	7.36	8.00
	<i>n</i>			8	11	19
50–70	<i>M</i>	9.00	<i>no data</i>	10.60	10.62	10.45
	<i>n</i>	2		5	13	20
All ages	<i>M</i>	6.00	6.11	8.17	8.23	7.55
	<i>n</i>	14	9	23	30	76

report scale scores (Baecke physical activity, support of family and friends, exercise self-efficacy, psychological well-being) were unrelated to attendance.

The profile of older exercisers differed from that of younger exercisers (Table II) and, as may be seen, the older participants had significantly higher systolic and diastolic blood pressure. There were non-significant trends suggesting that older women lived with fewer people at home, were less likely to smoke cigarettes, and less likely to be employed.

The 34 women still attending at the final week of the program more often tended to be church participants (49% as compared to 35% of the clinic participants), and older (mean age 41.5 as compared to 37.7), although neither of these trends was statistically significant at the 0.05 level.

Client satisfaction

The client satisfaction questionnaire was completed by those 34 women attending the final week of classes. All 34 respondents indicated that they liked the location of the exercise sessions and the days of the week and times of the day that they were held. All but one person indicated that they liked the instructor. And 31 of 34 (91%) said they would participate if the program were offered again.

Three month follow up

Thirty-eight of the original 76 participants (50%) returned for a follow-up visit 3 months after the exercise program ended. Using the self-reported question “Did you continue to exercise after the aerobics group ended?” the highest endorsement rates (87%) were reported by women in the age 50–70 quartile.

Discussion

Among the baseline measures of this study, age stood out as an independent predictor of attendance in this sample of ethnic minority women. This finding is supported by a

Table II Participant Differences by Age Groups

Demographic and health characteristics by age quartile (Maximum N ^a)					
	17–27 (17)	28–39 (20)	40–49 (19)	50–70 (20)	<i>p</i>
Systolic BP (<i>M</i>)	115.20	122.75	129.54	138.59	**
SD	9.99	9.47	8.01	16.97	
<i>n</i>	15	16	13	17	
Diastolic BP (<i>M</i>)	72.53	77.81	79.23	82.65	*
SD	9.52	6.93	3.96	10.80	
<i>n</i>	15	16	13	17	
Weight in lb (<i>M</i>)	158.30	191.50	173.36	183.80	
SD	40.07	39.91	37.04	37.37	
<i>n</i>	17	15	17	19	
Waist size inches (<i>M</i>)	33.90	37.40	36.50	38.50	
SD	5.84	5.94	7.30	5.92	
<i>n</i>	17	14	17	19	
People in home (<i>M</i>)	3.18	3.50	3.16	2.50	
SD	1.33	1.91	1.50	1.00	
<i>n</i>	17	20	19	20	
Children (<i>M</i>)	2.13	2.78	2.12	3.24	
SD	0.35	2.56	0.99	1.68	
<i>n</i>	8	18	17	17	
Age group					
<i>N</i>	17–27 (17)	28–39 (20)	40–49 (19)	50–70 (20)	<i>p</i>
Smokers (%)	18	5	6	0	
Employed (%)	79	95	83	63	
Race (%)					
Black	19	42	56	65	
Hispanic	56	58	44	35	
White or other	25	0	0	0	
Born in USA (%)	59	61	56	60	
Married or live-in partner (%)	53	17	44	44	
Returned for follow-up (<i>n</i>)	9	5	8	14	
Continued to exercise (<i>n</i>) (3 month follow-up, self-report)	4	4	4	11	

^a Some items are missing due to incomplete questionnaires.

* $p < 0.05$

** $p < 0.001$

literature review by Martin and Sinden (2001) indicating that in the general population, older adults are generally more adherent to exercise prescriptions than younger adults. Older age has also been shown to be associated with attendance in a church-based exercise program for African-American adults (Izquierdo-Porrera, Powell, Reiner, & Fontaine, 2002). There is a dearth of data on exercise adherence among ethnic minority women and this study extends the literature to show that the relationship between older age and attendance at an exercise program also holds true for Hispanic women.

Most participants did not attend enough of the exercise sessions to derive health benefit. The average number of exercise sessions attended was 7.55 out of 20 sessions. This finding is consistent with the 43% attrition rate from a church-based exercise program noted for 123 older African Americans (Prohaska, Peters, & Warren, 2000). In that study, health

problems and caregiver responsibilities were the most frequently cited reasons for drop out. In general, attrition rates from exercise programs among previously sedentary women are notoriously high (Marcus & Stanton, 1993). Since many health departments, hospitals and other health care agencies are committed to implementing risk reduction programs for underserved populations, the results from this study confirm that churches *are* a feasible location for exercise programs designed for older adults. Future research might test whether participation rates in church-based programs might be increased and attrition prevented, if programs emphasize enjoyment of group physical activities as a way to develop or strengthen social relationships (Thurston & Green, 2004).

It is difficult to design a study that can adequately test whether church settings can improve attendance for exercise programs, independent of age. A poll of 1008 randomly selected adults conducted by telephone by TNS Intersearch for ABC news showed that religious practice increases with age. In the general population, 60% of people age 65 and older attend religious services at least once a week compared to 28% of those between 18 and 30 years of age (ABCNEWS, 2004). By necessity, studies such as the present one, are conducted in naturalistic settings, and thus suffer the problems inherent in a correlational, as compared to a randomized, research design, namely, determination of causality. Future studies aiming to answer the question of whether a church setting improves attendance to health promotion activities might over-sample on younger age categories if enough younger congregants are available. Despite the lack of evidence for attendance differences in site the church and clinic recruitment sites afforded the opportunity for unusual comparisons.

The small sample size limited the power to detect other potential predictors of exercise adherence. Though self-efficacy and psychological well-being have been shown to predict adoption of exercise in older, sedentary, Caucasian women (Dornelas, Swencionis, & Wylie-Rosett, 1994), there was no association found between these variables in this sample of African American and Hispanic women. Though it is not possible to know from this study why older women were more likely to attend exercise sessions there are several plausible explanations. Women in the highest age category had fewer people living at home and possibly experienced fewer barriers to exercise posed by caretaking responsibilities, as Prohaska *et al.* (2000) have also shown. It is also plausible that the oldest women were more concerned about their health, as evidenced by the fact that none were cigarette smokers and as a group, they had higher blood pressure than women in the younger age categories. Another possibility is that women from the older generation felt greater responsibility to attend such programs once they had made the commitment.

These findings have particular relevance for administrators in medical settings who design community-based health promotion programs for urban-living women. The strengths of this exercise program were that it was designed to be culturally appropriate, as well as focus specifically on the exercise needs of sedentary women. Given the disproportionate risk for development of cardiovascular and other chronic diseases in this population, this study provides evidence that churches offer a promising site to engage older ethnic-minority women in exercise programs.

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