

Community Coverage in a Rural, Church-based, Hypertension Screening Program in Edgecombe County, North Carolina

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Abstract: In a rural, church-based hypertension program in Edgecombe County, North Carolina, screening of the congregations was complemented by a community outreach component targeted at 18–60 year old males, a group at higher risk for untreated hypertension. Compared with its estimated frequency in the community, untreated hypertension was as common in the church congregations and somewhat less prevalent than expected among outreach screenees. (*Am J Public Health* 1985; 75:401–402.)

Introduction

Reports from recent conferences indicate that church-centered hypertension programs are becoming a more common means to detect this disorder and to promote secondary prevention in medically underserved populations.* The degree to which these programs actually reach untreated hypertensives in the community remains to be evaluated.

An important concern is that relatively few untreated hypertensives might be found among church attenders, since the latter have been described as more likely to be older, female, and in regular contact with health care providers than non-churchgoers.^{1,2} Therefore, the church-centered hypertension program within the Edgecombe County (North Carolina) High Blood Pressure Control Program (ECHBPCP)^{3,4} was designed to include both screening of church congregations as well as a community outreach component that was targeted to reach more high risk persons—specifically, adult males under 60 years of age.^{3,5}

Methods

From over 20 churches located in two rural townships of Edgecombe County, six (three Black, three White) were selected on the basis of size, interest, and strength of existing community programs. Twenty-one volunteers (two to four per church) were educated about hypertension and were taught how to measure blood pressure and refer individuals with sustained elevated readings for medical care.

* Perry EJ, Williams BJ, Kong BW, *et al*: Church based programs in high blood pressure control. Paper presented at National Conference on High Blood Pressure Control, May 2–5, 1981, New York, NY; Lewis C, Apson J, Levine DM: Rural community based hypertension control experience. Paper presented at National Conference on High Blood Pressure Control, April 20–22, 1983, Washington, DC; Jenkins RS, Knobel R, Wilber JA, *et al*: Through directory of statewide high blood pressure resources, Georgia explores coordination of resources. Paper presented at Ninth Annual Southeastern High Blood Pressure Conference, October 5–7, 1983, Biloxi, MS.

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The volunteers screened their congregations in November 1982. They also were asked to conduct outreach screening in their communities from February through April 1983, targeting persons between 18 and 60 years of age who had not participated in a congregation screening. Each volunteer was asked to screen six or more adults during each month of the outreach, and to ensure that at least 50 per cent of outreach screenees be males.

Age, race, sex, blood pressure, and history of diagnosis and treatment were recorded at the screening. Three sitting blood pressures were taken; hypertension was defined by current use of antihypertensive medication or by an average diastolic pressure of 90 mmHg or more.

Information on the two townships came from two sources. Demographic breakdowns were obtained from the national census.⁶ Estimates of hypertension and treatment status were obtained from the ECHBPCP 1980 survey of a stratified (by township) random sample of households in Edgecombe County.³

We calculated confidence intervals to describe the precision of the estimated differences between screenees and the target population on hypertension and treatment status. We used linear regression to adjust the differences between proportions for race, sex, and age.⁷ Although churches were separated along racial lines, the results were similar across race.

Results

Relative to the general population, individuals from the church congregations were more likely to be White, female, and older (Table 1). The participants in the outreach, like the general population, were almost evenly divided in terms of race and sex. The goal of screening more young and middle-aged adults in the outreach effort led to overrepresentation of young adults.

Compared to its frequency in the 1980 survey, high blood pressure was slightly more prevalent within the congregations and slightly less prevalent among outreach

TABLE 1—Distribution of Population and Screening Participants by Race, Sex, and Age

Demographics	Census		Congregation Screening		Outreach Screening	
	N	(%)	N	(%)	N	(%)
Black	1,434	(45)	129	(37)	190	(47)
White	1,723	(55)	220	(63)	212	(53)
Female	1,712	(54)	235	(67)	213	(53)
Male	1,445	(46)	114	(33)	189	(47)
18–39 years	1,538	(49)	137	(39)	245	(61)
40–59 years	951	(30)	123	(35)	116	(29)
≥60 years	668	(21)	89	(26)	41	(10)
Total	3,157	(100)	349	(100)	402	(100)

screenees (Table 2); differences were reduced even further after adjustment. Hypertensive individuals from the household survey and the congregations were also comparable with regard to awareness and treatment of their condition.

We were surprised to find that lack of awareness and treatment were only slightly more common for the hypertensive outreach screenees, despite their relative youth and greater likelihood of being male (52 per cent vs 47 per cent of hypertensives in the household survey) and Black (60 per cent vs 53 per cent). Following adjustment, the percentages of unaware and untreated hypertensives were lower in the outreach group than in the household survey.

Discussion

Because of their reputation as stable and effective institutions, rural churches are logical sites for community based, health-related interventions.⁸ By expanding into the community (using church volunteers), such programs might reach more individuals with weak ties to supportive institutions (health, religious, etc.). Our assumption was that if such persons were hypertensive, they might be more likely than church-goers, or members of the general population, to be unaware of and untreated for their condition.

As anticipated, men between 18 and 60 years of age were underrepresented in the congregation screening. However, undiagnosed and untreated hypertension were about as common among church attenders as among participants from the household survey. These findings suggest the existence of unmet health needs in congregations themselves, and argue for continuation of hypertension activities in church settings.

The volunteers were successful in screening the targeted share of a high risk subgroup—young and middle-aged men. Awareness and treatment among hypertensive outreach screenees were unexpectedly high. The confidence intervals include the null value, but their full ranges suggest some advantage, particularly in treatment, for the outreach

hypertensives. This finding could reflect a change between 1980 and 1983, the years separating the household survey and the outreach. The absence of similar improvement in the congregation screening and a 1983 resurvey of Edgecombe County (to be discussed in a forthcoming report) makes this explanation less plausible.

Other possible explanations include methodologic factors, as well as chance. The findings could reflect an extension of the "volunteer effect"^{9,10}; the high level of health consciousness of volunteers doing this work may have been present for screened members of their social networks. There might have been selective participation by the "worried well."^{11,12} Persons concerned about their health (apart from whether they belonged to the volunteers' social network) could have been overrepresented in the deliberately unstructured outreach. We cannot empirically assess these speculations, but there is precedent for selective participation by health-conscious individuals in voluntary screening programs. These findings underscore the difficulty in reaching "true" high-risk persons even when targeting them on the basis of demographic risk factors.

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TABLE 2—Prevalence, Awareness, and Treatment of Hypertension in the Household Survey and Church-Based Screenings

	Household Survey	Congregation Screening	Outreach Screening
Screened	311	349	402
% Hypertensive	25	28	21
(Screen-Survey), unadjusted*	—	3 (-4,10)	-4 (-10,2)
(Screen-Survey), adjusted**	—	2 (-4,8)	2 (-4,8)
Hypertensive N	77	98	86
% Unaware	19	18	22
(Screen-Survey), unadjusted*	—	-1 (-13,11)	3 (-9,15)
(Screen-Survey), adjusted**	—	3 (-8,15)	-5 (-17,7)
% Untreated	36	33	37
(Screen-Survey), unadjusted*	—	-3 (-17,11)	1 (-14,16)
(Screen-Survey), adjusted**	—	-2 (-15,11)	-10 (-23,3)

*Differences between screenings and household survey are reported with 95% confidence intervals.

**Adjusted for race, sex, and age.