

The Washington Heights–Inwood Healthy Heart Program: A 6-Year Report from a Disadvantaged Urban Setting

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ABSTRACT

Objectives. This report summarizes 6 years of experience in a large community-based cardiovascular disease prevention program in a predominantly minority, urban setting.

Methods. The program seeks to reduce cardiovascular disease risk factors in an area of approximately 240 000 people in New York, NY; this population includes many Latino immigrants of low educational attainment and socioeconomic status. All program materials were in Spanish and English and at a low literacy level.

Results. Major elements that achieved high levels of reach and support were a marketing campaign promoting low-fat milk, exercise clubs, and a Spanish-language smoking cessation video. Program elements that did not meet expectations or were abandoned were school-based smoking prevention initiatives, cholesterol screening, and efforts to involve local physicians. At the end of 6 years, the program was transferred to a local community organization.

Conclusions. Conclusions are that it is feasible to implement a complex cardiovascular disease prevention program in a socially disadvantaged urban community; that additional evaluation research is needed; that such programs can be transferred from an academic center to a community organization; and that such programs are unlikely to be sustained effectively without external resources. (*Am J Public Health*. 1996; 86:166–171)

Introduction

Community-based cardiovascular disease prevention programs have the potential to reduce cardiovascular disease risk at the community and population level and thereby reduce cardiovascular disease incidence, morbidity, and mortality. These programs are based on a community health education model that uses social marketing techniques and community activation to change health-related behaviors in populations.^{1,2} The rationale for the community health education model for cardiovascular disease is that most of the population risk is due to modest elevations of risk factors in large numbers of people rather than extreme elevations in a few.

Large-scale efforts to test this model for cardiovascular disease prevention began in the early 1970s with programs in North Karelia, Finland,^{1,3-5} and in three communities near Stanford, Calif.⁶ Ten-year results from the North Karelia program showed significant reductions in coronary heart disease mortality in middle-aged men, as well as reductions in smoking, hypertension, and serum cholesterol levels.³⁻⁵ Two-year results from the Stanford Three Communities Study showed beneficial effects on smoking, hypertension, lipid levels, and saturated fat intake.⁶ In 1980, after the success of these programs, the Stanford Five-City Project,⁷ the Minnesota Heart Health Program,^{8,9} and the Pawtucket Heart Health Program¹⁰ were initiated with funding and coordination from the National Heart, Lung, and Blood Institute. These three programs failed either separately¹¹⁻¹³ or in a pooled analysis¹⁴ to show intervention effects on risk factor levels in cross-sectional sampling designs. Based on the cohort design, Stanford reported a

positive intervention effect on risk factors,¹¹ but positive effects were not discernable in Minnesota¹² or Pawtucket.¹³ Between 1985 and 1991 the Federal Republic of Germany (West Germany) implemented the German Cardiovascular Prevention Study in five regions with a total population of 1 288 400, while the remaining population of West Germany served as the reference group.¹⁵ After 6 years of intervention, the prevalence of hypertension was reduced by 29.7%, hypercholesterolemia by 11.5%, current smoking by 6.1%, and overall calculated cardiovascular disease risk by 6.1% for men and women combined.¹⁵ A carefully evaluated program in northern Italy with 15 years of follow-up data also reported positive intervention effects.¹⁶

Based on the published successes of the North Karelia and Stanford Three Communities Study, as well as encouraging early reports from the other programs, in 1988 the New York State Department of Health funded eight community-based cardiovascular disease prevention programs, one of which was the Washington

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Heights–Inwood Healthy Heart Program. The program was managed by a partnership of The Presbyterian Hospital, Teachers College of Columbia University, and the Columbia University School of Public Health. The goal was to reduce the prevalence of cardiovascular disease risk factors, specifically smoking, sedentary lifestyle, obesity, hypertension, and hypercholesterolemia in the target community and thereby to reduce cardiovascular disease morbidity and mortality. In 1994, at the end of 6 years of the New York State Healthy Heart Program, the New York State Department of Health reallocated these funds to a different cardiovascular disease prevention program model involving smaller investments for shorter periods of time in a larger number of communities and agencies throughout the state.

In an earlier report¹⁷ we noted several important differences between the Washington Heights–Inwood Healthy Heart Program and the National Heart, Lung, and Blood Institute–sponsored programs. The disadvantaged inner-city neighborhood targeted by the Washington Heights–Inwood Healthy Heart Program posed several challenges, including the low socioeconomic status of the population; the lack of defined geopolitical boundaries and governmental infrastructure; the cultural and linguistic diversity of the community (about two thirds Latino [predominately Dominican in origin], one sixth African American, and the remainder White but of several different ethnic origins); and the competing problems of urban life including crime, housing, jobs, crowded schools, and other health problems. The goal of the National Heart, Lung, and Blood Institute–supported programs was to evaluate the efficacy of the community health education model, whereas the goal of the Washington Heights–Inwood Healthy Heart Program was to implement the model. Approximately 70% of the budget of the National Heart, Lung, and Blood Institute–supported programs was allocated to evaluation compared with less than 10% of the Washington Heights–Inwood Healthy Heart Program budget, and the budgets in the National Heart, Lung, and Blood Institute–sponsored programs were substantially larger. For example, in Pawtucket, the budget averaged approximately \$15 per person per year in the community compared with \$1 to \$2 per person per year in the Washington Heights–Inwood Healthy Heart Program. Finally, the size of the staff was approxi-

mately 60 in Pawtucket compared with 6 in the Washington Heights–Inwood Healthy Heart Program.

In this report we describe the most successful program elements, as well as program elements that did not meet expectations, and comment on several public health policy issues raised by the experiences in the Washington Heights–Inwood Healthy Heart Program.

Criteria for Selecting Program Elements

There were different criteria for selection of program elements in the Washington Heights–Inwood Healthy Heart Program. First, we applied generic criteria related to health education needs assessment and program planning, specifically, acceptability to the target population, the resources required and available, and the public health importance of the risk factors.¹⁸ In the context of a behaviorally oriented cardiovascular disease prevention program, the risk factors chosen were high-fat diet, sedentary lifestyle, smoking, and, to a lesser extent, poorly controlled hypertension and hypercholesterolemia. Second, we were influenced by the published experience in the three US programs as of 1987^{2,19} and consultation with Pawtucket Heart Health Program staff. Third, criteria for program elements evolved over the program life cycle. Early in the program, establishment of program identity, awareness, and legitimacy was a high priority. Once these objectives were met, the emphasis changed to sustainability and potential for institutionalization.

Successful Program Elements

Our criteria for assessing the success of program elements were ability to reach large numbers of people; potential for long-term maintenance of behavioral, organizational, and social changes; and potential for existing community-based organizations to assume responsibility for implementation.

Low-Fat Milk Campaign

An earlier study of the nutrient intake and dietary behavior patterns of preschool children from the Washington Heights–Inwood Healthy Heart Program community found that approximately 40% of the saturated fat intake of this group was derived from whole milk.²⁰ Additional analyses²⁰ showed that substitution of 1% low-fat milk for whole (3.5% fat) milk,

without other dietary changes, would have the effect of lowering the group mean saturated fat intake from 13.3% of total calories to just under the 10% level recommended by the US Public Health Service for adults and children over the age of 2 years.^{21,22} We therefore formulated a multicomponent social marketing campaign to promote the substitution of low-fat milk for whole milk among children in the community.²³

Components of this campaign included development of a character named Lowfat Lucy, a Disney-like anthropomorphic cow; school-based presentations that featured Lowfat Lucy; outdoor taste tests; low-literacy print materials; public service announcements on Spanish-language television; efforts to increase the availability of low-fat milk in child care centers, school lunch programs, and bodegas (community grocery stores); and contests to involve community organizations and schools in promoting low-fat milk. The hallmarks of the campaign's success were the popularity and demand for Lowfat Lucy presentations in the schools; the popularity and high rates of participation in the low-fat milk taste tests; large increases in the proportions of students in targeted public schools who chose low-fat milk at lunch²⁴; and policy changes resulting in the increased availability of low-fat milk in child care centers and schools (6 of 28 schools or child care centers served low-fat milk before the campaign and 20 of 28 did so afterward).²⁴

Several factors contributed to the success of this campaign. The recommended behavioral change was easy to understand and simple to do, did not impose time commitments or significant monetary costs, was readily accepted by children, involved fun and interactive campaign activities, and emphasized positive messages and social reinforcements in campaign themes. Summative evaluation was limited by lack of follow-up data regarding changes in food consumption patterns and serum cholesterol levels.

Volunteer-Led Exercise Clubs

A baseline survey in the Washington Heights–Inwood Healthy Heart Program community showed a low prevalence of regular exercise among adults, particularly among Latinos.²⁵ In our community there are active male-oriented baseball leagues that emphasize outdoor competitive sport but very few indoor exercise facilities, organized aerobic exercise activities, or programs targeted to women. Informal discussions with groups of women

indicated that there was substantial interest in opportunities to be physically active. Sustainability was a major criterion in developing the strategy of establishing volunteer-led exercise clubs based in community organizations. The exercise program was directed at people who were sedentary and was therefore at a modest level of aerobic demand, and the program required little or no expenditure for special clothing or equipment. The exercises included stretching, calisthenics, and low-impact aerobics. We developed a training and certification program for club leaders, comprising 24 90-minute instructional sessions followed by written, oral, and performance examinations. We trained and certified 56 volunteers. Thirty volunteer-led exercise clubs were established, and 21 of these were active for 6 months or longer. The number of participants in each club ranged from 5 to 45, with 10 to 20 people participating in most clubs. More than 1200 individuals participated in the clubs in 1992 and 1993, more than 90% of the participants were Latinos and female, and approximately two thirds were between the ages of 18 and 39 years. The longer-term sustainability and health effects of these clubs were not assessed.

Spanish-Language Smoking Cessation Video

Smoking is a critically important health behavior, with major impacts on cancer and drug use as well as cardiovascular disease, and tobacco marketing is heavily targeted to youth and minorities, including Latinos. However, there is little smoking-related health promotion material in Spanish that carries the positive messages that we believe are most effective. Such messages reinforce a sense of self-empowerment arising from a decision to promote one's own and one's family's health by not smoking and enhance the value of Hispanic culture and identity in opposition to smoking, in contrast to materials that emphasize fear of the health consequences of smoking or label smokers in subtly denigrating ways. Because we were unable to identify any Spanish language video to promote smoking cessation, we produced a 16-minute video, "Usted Puede Dejarlo" ("You Can Do It"), that featured interviews with smokers who had successfully quit. The subjects were real people, some of them widely known in the community, including one physician with a large and successful practice. They discussed their reasons for quitting, the benefits of not smoking, how

positive it made them feel to quit, and the obstacles they had to overcome. The video was distributed to local physicians for use in the office, to teachers for use in parent education activities, and to community-based organizations. The video was also distributed by the State Department of Health and aired repeatedly on popular Spanish-language cable television shows. We do not have data on the effect of this effort on smoking prevalence.

Program Elements That Did Not Meet Expectations

School-Based Smoking Prevention Activities

Although we wanted to promote a school-based smoking prevention curriculum in area schools, we did not do so because our needs assessment indicated that we would not have had enough support from the school superintendent or school principals to make this effort feasible. Our school district has for years had one of the lowest proportions of students reading at grade level in New York City, and administrators are under intense pressure to improve student scores on standardized tests and to deal with other social pressures related to managing inner-city schools. Thus, even the most sympathetic administrators did not support the implementation of a smoking prevention curriculum.

Instead, we worked with the school district's established substance abuse prevention program to develop an annual special event, The World Without Smoke Advertising Contest, that could disseminate smoking prevention messages in an entertaining, interactive, and powerful way and that we hoped could be institutionalized. For this contest, students developed posters, poems, essays, songs, and skits to parody cigarette advertisements. Finalists displayed or performed their work at a highly publicized annual ceremony. We cosponsored this contest for 3 years, each year expanding the number of schools, grade levels, and students participating. To facilitate the institutionalization of this event, we gave increasing responsibilities each year to the district's substance abuse prevention program, and we prepared checklists, written guidelines, and ready-to-use materials to help them with their tasks.

After an extremely successful third year of the contest in which the ceremony was covered on two major television news

programs, the substance abuse program agreed in principle to take responsibility for organizing the fourth annual contest. At the time of the fourth contest, however, the substance abuse program found that, due to budget problems and personnel turnover, it could not maintain even the level of involvement it had provided in previous years. Without a commitment from the school district to take over this activity, and with no other organizations operating in the community that might do so, we felt that this extremely successful program element could not be institutionalized and therefore had to be abandoned.

Cholesterol Screening, Counseling, Education, and Referral

In the initial needs assessment phase of the Washington Heights–Inwood Healthy Heart Program, cholesterol screening was most frequently identified by community leaders and key informants as the highest priority.¹⁷ This was not surprising given that our community is medically underserved, and at that time (1988–1990) cholesterol screening was receiving a great deal of attention in the media. For over a year, fingerstick cholesterol screening at community sites was a major focus of the Washington Heights–Inwood Healthy Heart Program. We organized, publicized, and conducted 81 events at which 4299 individuals received cholesterol measurements, individualized counseling, and referral when appropriate. These events were popular with the leaders of community-based organizations, who saw them as a valuable service they could provide their clientele; this activity consequently earned the program a great deal of credibility and respect. However, population-based cholesterol screening was an extremely labor-intensive and logistically complex activity, and the number of people reached was limited. The counseling and referral component required spending considerable staff time in one-on-one conversations, and many of the people we attracted were those least in need of screening (i.e., those who had already been screened in the previous year). In addition, the technical requirements of screening, counseling, and referral made it impossible for community organizations to assume responsibility and to institutionalize this activity. After the screening activities had earned the Washington Heights–Inwood Healthy Heart Program considerable legitimacy in the community and when the New York

City Health Department made licensing requirements more stringent, we terminated this activity and focused on other services that reached larger numbers of people in a more cost-effective way. Although cholesterol screening had limited reach and public health impact, gaining the trust and respect of organization leaders and legitimizing the program in the minds of community members were valuable outcomes of this effort.

Motivating Community-Based Physicians to Promote Heart Health in Their Practices

Physicians are highly respected sources of health promotion information, and we tried a variety of approaches to motivate community-based physicians to promote a healthy lifestyle in their practices. Educational seminars on management of serum cholesterol were publicized through a local medical society, but participation was minimal. Booklets on the same topic developed by the American Heart Association were distributed to local physicians. A mailing was sent to local pediatricians urging them to encourage parents to serve low-fat milk to children over age 2 years. Literature racks and frames were installed in 12 physicians' offices, along with easy-to-read, bilingual flyers and posters developed by the Washington Heights–Inwood Healthy Heart Program. Physicians were asked to notify us when they needed their stock of materials replenished, but they almost never did, even though they reported great satisfaction with the materials. Staff eventually became frustrated. Based on discussions with these physicians, who remained friendly and supportive of the program, we concluded that competing demands on their time and attention precluded greater involvement.

Factors Influencing the Relative Success of Program Elements

The low-fat milk campaign, the exercise clubs, and the smoking cessation video all reached large numbers of people and demonstrated the potential for effecting long-term changes in behavior or policy or for being effectively integrated into the ongoing missions of existing community-based organizations. The smoking prevention contest, the cholesterol screening activity, and the outreach to physicians could not be sustained by the community beyond the 6-year funding

period for the Washington Heights–Inwood Healthy Heart Program.

Although the Washington Heights–Inwood Healthy Heart Program worked closely with community-based organizations in planning and implementing the low-fat milk campaign, the Washington Heights–Inwood Healthy Heart Program was the driving force, and there were no organizations that could assume responsibility for continuing campaign activities. However, the campaign led to policy changes that increased the availability and use of low-fat milk in educational centers; these changes are likely to be maintained in the future. The cholesterol screening activity also could not be adopted by an existing organization; however, unlike the low-fat milk campaign, it did not lead to any changes in institutional or organizational policies. Compared with the low-fat milk campaign, the individual behavioral changes promoted by the screening were more complex and less likely to be maintained.

Both the exercise clubs and the smoking prevention contests were designed to be integrated into the mission of existing organizations. These efforts tended to succeed when the individuals assuming responsibility were volunteers who had strong support and encouragement from organization leaders. These efforts were less successful when they involved individuals who were expected to manage the activities as part of their paid job in addition to preexisting responsibilities.

The smoking cessation video gave local educators and broadcasters a tool that met an existing need and could be effectively used for years to come with little effort. Efforts to provide local physicians with easy-to-use cardiovascular health promotion tools and skills did not succeed, probably because we were unable to identify appropriate motivational factors.

Policy Implications

Feasibility of Implementing the Community Health Education Model for Cardiovascular Disease Prevention in a Disadvantaged Urban Setting

The experience of the Washington Heights–Inwood Healthy Heart Program over 6 years supports the conclusion that implementation of a community-based prevention program to reduce cardiovascular disease risk is feasible in a low-income, predominately minority, urban setting. Our experience indicates that the

special challenges of implementing this model in such a setting can be met if appropriate relationships between the program and community leaders and organizations are established.

Evaluation

The budgetary configuration of the Washington Heights–Inwood Healthy Heart Program emphasized program implementation, with less than 10% of the total budget allocated to evaluation. The resources available for evaluation were committed to implementation monitoring and program-tracking activities in coordination with the State Department of Health. No effort was made at the program level to evaluate changes in knowledge, attitude, or behavioral outcomes, other than the study of the school component of the low-fat milk campaign.²⁴ At the state level, a baseline telephone survey with random-digit dialing methodology^{25–27} was conducted in the eight intervention communities in 1989 during the first year of the program. The evaluation plan called for a similar telephone survey to be conducted at the end of the program and for an additional comparison between changes in behavioral risk factors in the intervention communities as assessed through the two telephone surveys and changes in these risk factors in the remainder of the state as assessed through the ongoing, yearly Behavioral Risk Factor Survey. The follow-up telephone survey was not conducted because of budgetary constraints. Evaluation of community change,²⁸ as distinct from individual behavioral change, was more successful. For example, we were able to document significant changes in the availability and consumption of low-fat vs regular milk, as described earlier.

Questions remain unanswered about the Washington Heights–Inwood Healthy Heart Program's influence on behavior change and cardiovascular disease incidence and about program cost-effectiveness. Other more generic questions include what kinds of intervention strategies, programs, messages, and products are effective in disadvantaged, predominately minority, urban populations. Although the cost of evaluative research to address these issues is high, it is no higher than the cost of clinical trials of medical interventions (the population benefits of which are likely to be no greater than those of community health education) or than the cost of not knowing what is effective.

Need for Long-Term Programmatic Presence

Most health-related habits and cultural norms are learned and internalized over long periods of time. Thus, major shifts in these habits and norms are unlikely to be maintained without a long-term programmatic presence in the community. Such presence is required for several reasons. Multiple messages are often required to reinforce changes made by some individuals and organizations and to motivate change in individuals and organizations that are more resistant. Second, ongoing effort is required to communicate with individuals who immigrate into the community, particularly in areas such as Washington Heights–Inwood, where there is a high rate of immigration and turnover. Third, changing sociocultural and health-related norms and values require new strategies to achieve the long-term maintenance of behavioral changes and institutionalization of organization and social changes. Although some Washington Heights–Inwood Healthy Heart Program activities led to behavioral and institutional changes that will probably last, whether lasting changes in individual health behaviors can arise from activities implemented over a short period of time remains to be seen.

Transfer of the Washington Heights–Inwood Healthy Heart Program to a Community-Based Organization

An original objective of the Washington Heights–Inwood Healthy Heart Program was to create a process whereby the program could eventually be transferred to a community-based organization to help ensure long-term programmatic presence. During year 4, after the program was well established, we began exploratory discussions with community board members and other community leaders to help us to identify an appropriate organization. During year 5 we reached consensus that the Dominican Women's Development Center best met the selection criteria, and during year 6 we entered a fuller partnership with the Dominican Women's Development Center. At the start of year 7, the Washington Heights–Inwood Healthy Heart Program was fully transferred to the Dominican Women's Development Center. The center became the prime contracting agency and took full ownership of the program, including its name, telephone numbers, and physical

assets. The original program office was closed.

One challenge in the transfer phase was to weave the goals of the Washington Heights–Inwood Healthy Heart Program into the agenda of the Dominican Women's Development Center, rather than to get the center to change its mission and program. Health is part of the self- and group-development agenda of the Dominican Women's Development Center, so there was receptivity to the partnership from the beginning. Support of the community boards of the Dominican Women's Development Center and the Washington Heights–Inwood Healthy Heart Program for the transfer was another important factor.

A second challenge was funding. In 1994 the New York State Healthy Heart Program, as originally implemented in 1988, was terminated, and the resources were reallocated to a larger number of substantially smaller programs, including some continuations of the eight original programs. Both the continuation and a supplemental grant to the Dominican Women's Development Center were funded, so that in year 7, the program budget totaled \$260 000. The original program was reduced in scope, although the exercise clubs and low-fat milk campaigns were continued. The supplemental grant provided resources for a new program component in which nutrition and health education materials were incorporated into the English-as-a-second-language instructional materials used by the Dominican Women's Development Center and other community-based organizations in their classes. These classes reach approximately 5400 individuals per year. These experiences indicate that program transfer from a hospital–university consortium to a community-based organization is feasible. The longer-term implications of program transfer remain an open issue.

Termination vs Ongoing Funding

Vigorous advocacy for ongoing program funding, including the supplemental grant, by Washington Heights–Inwood Healthy Heart Program community board members, other community activists, and local elected officials played an important role in obtaining a sufficient level of funding for the program to continue in year 7. The basis for this advocacy was that programs like the Washington Heights–Inwood Healthy Heart Program in poor communities whose internal resources are severely constrained cannot be sustained without resources from external agencies.

Just as it does not seem reasonable to expect other health-related and social programs to be self-sufficient without ongoing funding support from governmental agencies, we do not believe policymakers should expect community-wide health education programs to be viable in the long run without ongoing support, particularly in low-income communities.

Conclusions

We draw four main conclusions from our 6-year experience in the Washington Heights–Inwood Healthy Heart Program. First, the community health education model^{1–17} is feasible in a socially disadvantaged, predominately minority community. Second, additional evaluation research is needed to assess program impacts on cardiovascular disease risk factor levels and cardiovascular disease morbidity and mortality. Third, community health education programs can be successfully transferred from an academic health center to a community-based organization. Fourth, in poor, disadvantaged communities, such programs require ongoing commitment of resources from external agencies, such as health departments, in order to be sustained. □

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