



HEALTH PROMOTION IN THE
CITY: A STRUCTURED REVIEW
OF THE LITERATURE ON
INTERVENTIONS TO PREVENT
HEART DISEASE, SUBSTANCE
ABUSE, VIOLENCE AND HIV
INFECTION IN US
METROPOLITAN AREAS,
1980-1995

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ABSTRACT To achieve its national public health goals, the US must improve the health of low-income urban populations. To contribute to this process, this study reviewed published reports of health promotion interventions designed to prevent heart disease, HIV infection, substance abuse, and violence in US cities. The study's objectives were to describe the target populations, settings, and program characteristics of these interventions and to assess the extent to which these programs followed accepted principles for health promotion. Investigators searched five computerized databases and references of selected articles for articles published in peer-reviewed journals between 1980 and 1995. Selected articles listed

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as a main goal primary prevention of one of four index conditions; were carried out within a US city; included sufficient information to characterize the intervention; and organized at least 25% of its activities within a community setting. In general, programs reached a diverse population of low-income city residents in a variety of settings, employed multiple strategies, and recognized at least some of the principles of effective health promotion. Most programs reported a systematic evaluation. However, many programs did not involve participants in planning, intervene to change underlying social causes, last more than a year, or tailor for the subpopulations they targeted, limiting their potential effectiveness. Few programs addressed the unique characteristics of urban communities.

KEY WORDS Health Promotion, Heart Disease, HIV, Prevention, Substance Abuse, Urban Health, Violence.

INTRODUCTION

In 1990, 82% of Americans lived in metropolitan areas, defined by the US Census Bureau as a city with a total population of at least 50,000 inhabitants or an urbanized core area of at least 50,000 inhabitants with another 50,000 people closely integrated socially and economically with the core.¹ About one-quarter of the US population in 1990 lived within cities with populations of more than 100,000. While some of the nation's largest cities have lost population to the suburbs in the last two decades, smaller cities have continued to grow, and observers agree that, in the 21st century, the US will continue to be an urban nation.²

At the same time, low-income populations increasingly have become concentrated in cities, and urban populations bear a disproportionate burden from disease and injury, such as HIV infection, tuberculosis, violence, substance abuse, asthma, and other conditions.³⁻¹⁰ Some recent studies suggest that the disparity in morbidity and mortality between low-income and higher income Americans is growing,¹¹⁻¹² a disparity particularly apparent among urban populations.¹³ If the US is to achieve its health goals as described in Healthy People 2010 and similar documents,¹⁴ it must find ways to improve the health of urban populations.

In the past 20 years, public health professionals have launched a variety of interventions in noninstitutional community settings; some of these interventions were designed to improve the health of urban populations. Understanding the specific characteristics of these programs and their accomplishments and limitations may help to design more effective interventions in the coming decades.

In this study, investigators reviewed reports published between 1980 and 1995 of interventions designed to prevent heart disease, substance abuse, HIV infection, and violence in US cities. These conditions were selected because they represent both chronic and infectious diseases and social conditions that impose a substantial burden of morbidity and mortality on urban populations. The

goals of the literature review were to describe the populations reached by these programs; characterize the methods, settings, evaluations, and obstacles encountered in these interventions; and compare similarities and differences by health condition. By comparing the characteristics of these programs with general principles of effective health promotion practice, the investigators sought to assess the extent to which these interventions met general professional standards. Finally, the study sought to provide guidance to help researchers, funders, and editors and writers for professional journals to report the results of interventions in a way that can contribute to the development of more effective interventions for urban populations.

METHODS

To identify relevant studies, investigators conducted computerized searches of five databases (ERIC, CINAHL, MEDLINE, AIDSLINE, SOCIOFILE) for articles published between 1980 and 1995 that described interventions that took place in US cities. Key words used in the search were the index health conditions heart disease, HIV, violence, and substance abuse (including alcohol, tobacco, and other drugs); prevention; and community. A total of 1,163 abstracts of articles generated by the search were reviewed to determine whether they met criteria for inclusion in the study; from these abstracts, 556 articles were reviewed, and those that met inclusion criteria were accepted. The references listed in these selected articles were examined to identify additional relevant studies. Through these processes, a total of 135 intervention studies were included in this review.

Criteria for inclusion were publication in a peer-reviewed journal between 1980 and 1995; primary prevention of heart disease, substance abuse, HIV, or violence listed as a main goal; setting within a US city with more than 50,000 people; a description of the intervention and/or its evaluation that included sufficient information to characterize the intervention; and at least 25% of activities (in the judgment of the reviewer) took place in a noninstitutional community setting. This last criterion excluded studies based solely in schools, health care facilities, or workplaces, settings that are affected by different dynamics and have been addressed more systematically in the public health literature.

Of the 135 interventions reviewed for this report, 30 (22%) addressed heart disease, 59 (44%) HIV infection, 17 (13%) violence, and 29 (21%) substance abuse. The unit of analysis is the intervention (not the published report), and several interventions are described in more than one article. In some cases, supplementary articles did not meet all the criteria for inclusion (e.g., publication in a peer-reviewed journal), but helped to characterize the intervention further. A list of

the 189 articles reviewed to assess the 135 selected interventions is available from the first author.

Reports that met the criteria for inclusion were coded, using an instrument developed for this project, by research assistants with graduate training in public health. The instrument included closed-ended questions characterizing the target population, objectives, sponsor, setting, strategies, and assessment of the program. These data were entered in a database, and descriptive profiles were generated using standard statistical packages. This report describes frequencies of variables of interest.

This study has several limitations. It was based only on interventions described in peer-reviewed journals and thus represents only a small portion of the universe of health promotion interventions carried out in US cities. It was limited to categorical programs designed to prevent four specific health conditions and thus does not include more comprehensive health promotion programs that may have addressed broader social conditions. It does not include secondary prevention programs such as asthma control, diabetes management, or substance abuse treatment, interventions that may have different characteristics and different target populations. It does not include articles describing multisite studies that included both urban and nonurban populations if results were not reported separately for urban sites. Furthermore, since there is no single listing of all published reports meeting the inclusion criteria, it is possible that the search methods failed to identify some articles that should have been included.

In addition, information included in this study was limited to that appearing in the published articles. The type of information presented and the level of detail varied considerably, in part because of restrictions in journal space. Since investigators did not correspond with the authors of the reviewed articles, it was not possible to ascertain whether the failure to include a description of a specific characteristic or outcome indicated its real absence or simply the failure to mention it. Authors did not report the amount of funding, so the impact of differential resources could not be assessed. This review is not a meta-analysis. Data were not pooled, and the wide variability in outcome measures and evaluation strategies made it impossible to assess the impact of these programs on health status across studies. Finally, the study did not review interventions described after 1995, when some investigators began to pay greater attention to the policy and structural factors that influence urban health.¹⁵⁻¹⁶

Despite these limitations, the interventions reviewed for this report generally met two important criteria: They succeeded in winning resources from public or private funders to carry out the interventions, and the articles describing

these programs were accepted by peer-reviewed journals. Moreover, the articles generally included what authors, reviewers, and editors deem to be significant accomplishments or observations. These interventions represent what two important stakeholders—funders and peer reviewers—judge to be best practices. Thus, the literature summarized in this report played a key role in shaping funding and research relating to health promotion in US cities in the last decade.

These articles also describe the types of interventions (e.g., skills workshops, small group discussions, and community media) that constitute a significant portion of urban health promotion practice. Given the categorical streams of funding for most health promotion programs, more interventions target a single condition than address multiple problems. Thus, some of the findings from this review of categorical programs may be generalizable to other conditions affecting urban populations, such as lead poisoning, cancer, or infant mortality.

RESULTS

On the whole, these programs targeted lower income urban residents in larger cities, especially African-Americans and Hispanics. Table I summarizes data on target populations. Most interventions targeted several subpopulations, including groups of different ages, races/ethnicities, and genders. Only 5% reported specifically targeting non-English speakers (data not shown), a growing proportion of the population of many US cities. Almost half the studies did not report data on the socioeconomic status of the target population.

Investigators in these studies defined their target populations in different ways: 40% (N = 54) by geography, 37% (N = 50) by behavior or identity, 12% (N = 16) by ethnicity, and 11% (N = 15) by some other characteristic, such as gender or age. Interventions to prevent heart disease and substance abuse were more likely to define their target population by geography (57% and 76%, respectively, compared to 12% for HIV and 47% for violence) and HIV programs by behavior or identity (59% versus 3% for heart disease, 24% for substance abuse, and 41% for violence). It was not possible to assess systematically whether the targeting choices reflected epidemiological data on risk in the specific population of interest.

As shown in Table II, the majority of the programs described in these reports were sponsored by universities, medical institutions, or health departments, organizations generally controlled by people living outside urban low-income communities. Interventions took place in a variety of settings, although places with high proportions of the most disadvantaged sectors of the population, such as housing projects, criminal justice agencies, or street corners, were used less

TABLE I Target Population of Interventions

Characteristic	Number of Studies (N = 135)	Percentage of Studies
Population of jurisdiction*		
>1 million	49	36
500,001–1 million	25	19
100,001–500,000	28	21
50,001–100,000	5	4
Multicity	19	14
No data	9	7
Age† (years)		
0–5	11	8
6–12	38	28
13–21	73	54
22–45	75	56
46–65	52	39
65+	33	24
Race/ethnicity†		
African-American	96	71
Latino/Hispanic	71	53
White, non-Latino	68	50
Asian	19	14
Pacific Islander	3	2
Native American	7	5
Other	19	14
Socioeconomic status* (SES)		
Mostly below federal poverty line	12	9
Mostly lower income (\$12–25,000)	9	7
Mix of poor and lower income	33	24
Middle income (\$25,001–60,000)	4	3
Higher income (>\$60,000)	0	0
Other	13	9
No data on SES	64	47
Gender†		
Male	111	82
Female	125	93

*Total percentage may not equal 100 due to rounding.

†Categories are not mutually exclusive and therefore may total more than 100% (i.e., many studies included both genders and many age groups and ethnicities).

TABLE II Intervention Characteristics

Characteristic	Number	Percentage
Primary sponsor*		
University	45	33
Hospital/health center	15	11
Community organization	14	10
Health department	11	8
Social service agency	9	7
Criminal justice agency	4	3
Other	17	13
No data	17	13
Settings†		
Community center	29	21
Hospital/health center	23	17
School/college	22	16
Social service agency	21	16
Media	20	15
Street	16	12
Church	15	11
Health department	12	9
Criminal justice agency	12	9
Housing project	5	4
Workplace	4	3
Length of intervention		
More than 1 year	80	59
1 year or less	43	32
No data	12	9
Intervention strategies‡		
Skills workshops	69	51
Small group discussions	67	50
Community media	59	44
Lectures	51	38
Outreach	49	36
Staff training	46	34
Counseling	31	23
Recreational activities	24	18
Educational materials	24	18
Peer education	23	17

*Total percentage may not equal 100 due to rounding.

†Categories are not mutually exclusive and therefore may total more than 100%.

frequently than other types of settings. Most interventions (59%) lasted less than 1 year.

The programs reported using on average 4.5 different intervention strategies, with a range from 1 to 13. Those methods used by more than a third of the programs included skills workshops, small group discussions, community media, lectures, outreach, and staff training. Less than a quarter of the programs reported use of counseling, recreational activities, educational materials, or peer education. The mean number of intervention strategies used by programs addressing different health conditions did not vary considerably.

Most interventions (80%, $N = 108$) were directed at the individual as the target of change; another 10% ($N = 14$) targeted community-level change, and 8% ($N = 11$) targeted some other level of change. The most common type of objective was reductions in individual risk behavior, reported by 87% of the programs ($N = 117$). Less commonly cited objectives were changes in community norms (25%, $N = 34$), changes in the community environment (18%, $N = 24$), changes in organizations (13%, $N = 17$), and changes in public policy (10%, $N = 13$).

Programs differed by condition in choosing levels of objectives for change. As shown in Table III, heart disease prevention programs were more likely to include both individual- and group-level objectives than programs for the other three conditions, although overall only 24% ($N = 33$) of the programs included objectives at both levels. Group-level objectives included changes in norms, social networks, or the community environment.

At a conference organized by the US Centers for Disease Control and Prevention and the Society for Public Health Education, health education researchers developed a consensus statement of several principles of practice derived from previous theoretical and empirical studies of health promotion.¹⁷ Other investigators have identified similar principles.¹⁸⁻²¹ These include the importance of tailor-

TABLE III Program Objectives by Health Condition

Health Condition	Individual Only		Group Only		Both Individual and Group	
	N	(%)	N	(%)	N	(%)
Heart disease	15	(50)	0	(0)	11	(37)
HIV	44	(75)	1	(2)	10	(17)
Substance abuse	14	(48)	6	(21)	7	(24)
Violence	11	(65)	0	(0)	5	(30)
All	84	(62)	7	(5)	33	(24)

ing interventions to meet the specific needs of various populations, involving program participants in planning and implementation, and using multiple strategies and settings.

Table IV summarizes the results of an assessment of the prevalence of some of these characteristics in the reviewed studies. While many programs reported using more than one principle, no single characteristic was reported in more than two-fifths of the programs, and several were acknowledged by less than one-fifth of the authors.

Health education researchers emphasize the importance of basing health promotion interventions on relevant behavioral or social science theories.¹⁸ In these studies, 59% of the authors did not mention a specific theory or model that informed their work; 26% (N = 35) reported using social learning theories; 11% (N = 15) reported use of the Health Belief Model; 4% (N = 6) used empowerment models; 4% (N = 5) used ecological models; and 21% (N = 28) cited various other types of models. Reports on violence prevention programs were less likely to mention one or more theories or models (17%) than were reports on heart disease (47%), HIV (38%), or substance abuse (38%) prevention programs.

The interventions described in the studies were funded publicly and privately. Overall, 39% of the programs (N = 53) reported federal funding, 19% (N = 25) state funding, and 7% (N = 10) local funding. There were 17% (N = 23) funded from a foundation or corporation, 8% (N = 11) from their sponsoring organization, and 4% (N = 6) from a university. HIV prevention programs were twice as likely to have federal funding as the other conditions, and heart disease and substance abuse prevention programs were almost twice as likely to have state government

TABLE IV Use of Principles of Effective Health Promotion

Principles	Number	Percentage
Recruited leaders from community	49	36
Adapted educational materials for target population	41	30
Offered monetary incentives	40	30
Matched clients and staff on relevant demographic characteristics	40	30
Developed culturally specific activities	35	26
Included participants in program planning	30	22
Offered intervention at flexible hours	29	21
Developed age-specific activities	27	20
Included participants in assessing needs	19	14
Developed gender-specific activities	15	11
Included participants in program evaluation	13	10
Delivered intervention in language other than English	13	10

funding as the other conditions. In all likelihood, these differences reflect legislation that distributes some funds directly through the federal government and others through block grants to states.

Evaluation enables program staff to improve their services and policymakers to consider institutionalization and replication. To assess the evaluation component of these studies, reviewers noted the presence or absence of various evaluation strategies and methods. Overall, 82% of the studies described an evaluation of the intervention.

As shown in Table V, the majority used the individual as the unit of analysis for the evaluation. The most commonly used evaluation design was a pre/postintervention knowledge, attitude, and behavior survey. Of the studies, 41% reported the use of a comparison or control group, and 13% selected participants randomly from a defined population. Two-thirds of the programs reported testing results for statistical significance, but relatively few programs reported identifying or controlling for confounding variables, using power analysis to calculate

TABLE V Evaluation Methods Reported

Characteristic	Number	Percentage
Unit of analysis		
Individual	102	76
Community	17	13
Organization	8	6
Method of data collection		
Pre/post intervention surveys	47	36
Observations	34	25
Physiological measurements	21	16
Focus groups	19	7
Assessment of health service utilization	9	7
Chart review	4	3
Evaluation design		
Uniform data collection	70	52
Comparison group	56	41
Standardized instruments	46	34
Random assignment	41	30
Participants drawn from identified population	18	13
Data analysis		
Tests for significance	89	66
Control of confounding variables	48	36
Power analysis/discussion of sample size	38	28
Reports of confidence intervals	14	10

the sample size needed to ascertain whether a real effect could be detected, or including confidence intervals for the results.

Finally, reviewers rated the authors' assessment of their success in achieving their defined objectives. As shown in Table VI, 81% of the authors (N = 109 interventions) judged their programs to be successful or moderately successful, and 10% (N = 13) judged them unsuccessful. These ratings varied somewhat by condition, with violence and substance abuse prevention programs more likely to be rated as unsuccessful than HIV or heart disease prevention programs.

DISCUSSION

This review of urban-based community interventions designed to prevent heart disease, HIV infection, substance abuse, and violence demonstrates that these programs reached a diverse population of low-income city residents in a variety of settings, employed multiple strategies, and recognized at least some of the principles of effective health promotion. Perhaps because the review was limited to peer-reviewed publications, most programs reported an evaluation that included some elements of a rigorous design. The diversity of experience represented in these articles suggests that systematic syntheses of intervention literature may yield insights that can guide practice.

The review also revealed a number of problems. First, these programs primarily target individual change in setting objectives, selecting strategies, and evaluating the process and impact of the intervention. Yet, cities are characterized by dense populations, complex social networks, and a social environment that plays a key role in health and disease, all these operating at the community level. Few of these programs reported utilizing the unique assets or addressing the unique problems that distinguish urban social life.

Many observers from different disciplines have noted that urban communities are complex multilevel environments,²²⁻²⁵ yet few interventions addressed more than one level, and few used the ecological models²⁶⁻²⁹ that may help to inform

TABLE VI Authors' Assessment of Success

Condition/Level of Success	Heart Disease		HIV Infection		Substance Abuse		Violence		All	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Successful	25	(83)	31	(52)	16	(55)	11	(64)	83	(61)
Moderately successful	3	(10)	16	(27)	5	(17)	2	(12)	26	(19)
Not successful	1	(3)	4	(6)	4	(14)	4	(25)	13	(10)
No rating	1	(3)	8	(14)	4	(14)	1	(6)	14	(10)

more comprehensive interventions. Almost half of the studies did not report the socioeconomic status of participants, limiting the ability of interventions to address the specific needs of their target populations as they relate to socioeconomic status or readers to generalize from these reports. Social and economic factors clearly influence the health of urban populations, including the incidence and prevalence of heart disease, HIV infection, substance abuse, and violence, yet few of these programs sought to change the policies or social conditions that damage health.

Tailoring programs to subpopulations is recognized as a key principle of health promotion,^{20,21,30,31} and urban communities typically include diverse subpopulations.² A second problem is that few of these studies described whether or how investigators tailored the interventions to meet the unique needs of the multiple ethnic/racial, age, and gender groups they reported seeking to engage.

Failure to tailor interventions to the specific population may create difficulties since many of the models for health promotion programs have been developed for nonurban, nondisadvantaged populations. Heart disease prevention programs, for example, were developed first in small towns that were primarily white and middle class, substance abuse prevention programs in middle-class school systems, and HIV prevention programs for middle-class gay men. Transplanting these programs to urban disadvantaged populations without sufficient modification may compromise their effectiveness. Authors may have taken steps to tailor their programs, but may not have reported these efforts, again limiting the use of these articles for practitioners seeking to replicate the studies.

Third, fewer than half of the authors of these studies referred to theoretical models from the social sciences, a finding noted elsewhere.^{17,18} This probably reflects several factors, including limited communication between social science researchers and interventionists, especially those that choose to work in difficult urban environments; the limited utility of existing theories to provide real guidance to interventions; and the specific lack of theories that address the complex realities of promoting health in urban communities.³²

Fourth, the interventions described in these articles generally used a limited number of intervention strategies; emphasized didactic, rather than interactive, methods; and had a relatively short duration, usually less than 1 year. Current understanding of the epidemiology of the target health conditions, the principles of adult education, and the reality of urban life suggest that more effective interventions include many activities, use multiple channels of communication, and maintain the involvement of participants for prolonged periods.³²⁻³⁵

Fifth, these studies did not describe active involvement and oversight of

participants in planning, implementing, and evaluating the interventions; most interventions were sponsored by institutions not controlled by community residents. Not only is participation recognized as a way of increasing the involvement of community residents (and therefore presumably increasing the health impact), it also assists program planners to tailor the program better to the unique needs of the target population. The combination of limited participation and limited tailoring may diminish the potential impact of these interventions significantly.³⁶

Improving the health of low-income urban populations in the US constitutes a primary public health challenge for the 21st century. This review of published reports of interventions to prevent heart disease, HIV, substance abuse, and violence among urban US populations showed that these programs have reached a diverse cross section of urban low-income populations and have reported some success in achieving their defined objectives.

At the same time, however, many have not addressed fully the unique characteristics of urban communities or the range of causes of ill health among low-income urban residents. The emphasis on individual behavior, the lack of attention to socioeconomic and policy factors, and the limited duration and scope of many of these interventions makes it unlikely that these types of programs by themselves will reduce the growing disparities in health status between the poor, minority populations increasingly concentrated in cities and the rest of the population.

By seeking to ground interventions more firmly in the realities of urban communities, it may be possible to increase their effectiveness. Specific steps that could help to achieve this goal include

- develop multilevel interventions that target both individual and community change, including changes in policies and social conditions that contribute to adverse health outcomes;
- tailor interventions to meet the unique needs of various subpopulations of diverse urban communities;
- encourage social scientists, public health practitioners, and community residents to collaborate to generate theories and models that can inform interventions in urban communities;
- involve the participants in urban community health interventions more fully in planning, implementing, and evaluating programs.

Finally, authors and editors of peer-reviewed journals should consider establishing standardized criteria for the descriptions of interventions, target populations, settings, and reports of process and outcome. Such standardization will

allow practitioners and policymakers to make generalizations that can guide future practice in urban communities and other settings more efficiently. Models of standards for reporting the results of clinical practice trials may help to guide such an effort.³⁷

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