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COMMUNITY-BASED PREVENTION PROGRAMS IN THE WAR ON DRUGS: FINDINGS FROM THE "FIGHTING BACK" DEMONSTRATION

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Illegal drug use remains one of the United States' most serious health problems, and the "War on Drugs" continues without an end in sight. Antidrug programs, which offer the potential to reduce substance abuse problems, are a component of efforts to deal with the problem, but they operate absent adequate scientific analysis. Although policy has shifted from a focus on supply control to one that includes prevention and treatment, research and theory lag behind program implementation. Thus, for example, community-based programs designed to change norms and systems of substance use have been widely promoted despite the lack of data to support their use. The present paper summarizes findings from an evaluation of a large national demonstration program, "Fighting Back." Results of the evaluation of broad-based community initiatives in a dozen communities show that the programs failed to reduce rates of substance use and associated harms. These findings, along with other evidence, place reliance on community-based programs at odds with public rhetoric. To deal more effectively with substance abuse, there is a need to move from "grading" programs to understanding why and how interventions function.

INTRODUCTION

Illegal drug use continues to be one of the nation's most serious health and social problems. The problem calls out for systematic analysis of its causes as well as of

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the effectiveness of prevention and treatment. Yet, as the National Research Council (NRC, 2001) has noted, policy has often been made absent the use of scientific knowledge, and existing research is "strikingly inadequate" (NRC, 2001). "It is unconscionable," the NRC concludes, "for this country to continue to carry out a public policy of this magnitude and cost without ... knowing whether and to what extent it is having the desired effect" (p.11). There has been some increased attention to systematic research since the NRC report was issued (primarily in areas related to youth prevention; see, e.g., Biglan, Mrazek, Carnine & Flay, 2003; Botvin, 2004), but inadequate use of research continues. The present report describes the evaluation of a major effort to prevent substance use and abuse through the development of community coalitions. Our focus is to describe the findings and to assess their implications for policy.

Community coalitions have been widely promoted as key to dealing with the nation's drug problems, and coalitions have become a staple of government policy (Office of National Drug Control Policy [ONDCP], 2004). Current interest has its roots in the late 1980s, when, at the height of the crack/cocaine epidemic, the Robert Wood Johnson Foundation (RWJF) developed its "Fighting Back" initiative. Fighting Back focused on reducing demand for illicit drugs through prevention and other efforts. The Fighting Back evaluation has important implications for understanding community partnerships, for the study of substance abuse interventions, and for the use of systematic research in development of drug policy. It is a case study in how difficult it is to balance the enthusiasm of advocates with systematic research data.

THE WAR ON DRUGS

By the late 1990s, the "war" against drugs was a $40 billion campaign (Kleiman, 1998) and the health, social, and economic problems associated with substance abuse were estimated to cost more than $250 billion per year (National Institute on Drug Abuse [NIDA], 1998). Spending on drug control remains high, yet the return on this investment is unclear. There has been a long-standing gap between scientific knowledge about drug use and public policy (see, e.g., Gusfield, 1975). It includes a lack of understanding of bio-psychological features of addiction (Leshner, 1997), barriers to the use of research-based treatments (O'Brien, 1997), and analyses of the effectiveness of research-based treatments (NRC, 2001). Drug policy seems to have been driven by public concerns and has relied on law enforcement and interdiction of supply interventions. There has been an uncritical acceptance of such shibboleths as "zero-tolerance" and the "gateway" policies. Although advocates of such policies make simple and confident predictions, the outcomes are typically more complex (MacCoun & Reuter, 1997).

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There is a chronic disconnect between independent research and development of new policies. Programs that inspire enthusiasm, whether effective or not, are difficult to modify or discard based on research evidence. The dilemma is magnified because inherent methodological limits make it difficult to apply research directly and quickly. Researchers are also hamstrung by policy makers who "shoot before they aim" and limit testing of programs to those that meet political criteria. Thus, for example, federal funding only supports programs that convey a zero-tolerance, "no-use" message.

Thus, for example, the Drug Awareness Resistance Education (DARE) has been used in more than three quarters of U.S. school districts (DARE, 2004). Numerous evaluation studies, however, have failed to find any long-term benefit from DARE in deterring drug use among young people (Ennett, Tobler, Ringwalt & Flewelling, 1994; Lynam et al., 1999). Only in recent years, however, has DARE undergone a systematic reform, stimulated by private philanthropic funding. Despite DARE's persistence in the face of unsupportive research, better mechanisms are now in place to insure more effective analysis of new programs. In fact, federal funding is now restricted to programs that satisfy "principles of effectiveness." Applying evidence-based rules is complex, however, and independent evaluations often raise questions about these studies (see Brown, 2001).

COMMUNITY COALITIONS

The past two decades have seen increased interest in community-based health promotion and prevention initiatives as an alternative to supply reduction efforts (Berkowitz, 2001; Israel, Schulz, Parker, & Becker, 1998; Reppucci, Woolard, & Fried, 1999; Sorensen, Emmons, Hunt, & Johnston, 1998). The focus on prevention is, in part, attributable to the increased emphasis on the "social ecology" or environmental influences on major causes of morbidity and mortality (Aguirre-Molina & Gorman, 1996; Brody, 1975; Butterfoss, Goodman, & Wandersman, 1993; Kelly, 1966; Stokols, 1992; Thompson & Kinne, 1990) and the general interest of health professionals on prevention (Institute of Medicine [IOM], 1996; National Institute of Mental Health [NIMH], 1996; Reppucci et al., 1999). Prevention efforts are also a function of renewed interest in participatory processes to "empower" communities (Allamani, Voller, Kubicka, & Bloomfield, 2000). The World Health Organization (WHO) recommended that coalitions be the center of health promotion initiatives as the "empowerment of communities, their ownership and control of their own endeavors and destinies" (WHO, 1986 [in Minkler, 1997, pg. 89]).

In the late 1980s, at the height of the violence associated with the United States' drug problem (Musto, 1997) and in response to high-profile drug-related deaths (Massing, 1998; Reinarman & Levine, 1997), public concern about illicit drugs combined with the increased interest in community-based approaches to public

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health problems. One result was RWJF's development of Fighting Back, a national demonstration project designed to reduce the demand for alcohol and drugs through the support of community-based programs (Jellinek & Hearn, 1991; RWJF, 1989; Spickard, Dixon, & Sarver, 1994). The program was developed in order to "find out whether, by consolidating existing programs, activities, and other resources into a single community-wide comprehensive system of prevention, early identification, treatment, and aftercare services, a community can achieve substantial reductions in the use of illegal drugs and alcohol" (Jellinek & Hearn, 1991, p. 79). In 1990, the program was implemented in 14 sites, five of which were funded through 2002.

Also in 1990, the U.S. government initiated its own program, Community Partnerships (Yin & Kaftarian, 1997). Since that time, community "coalitions" or "partnerships" (Winick & Larson, 1997) have become a major repository of some of the faith previously placed in law enforcement. Although the National Institute on Drug Abuse (NIDA) recommends comprehensive community programs as a potential strategy (NIDA, 1997), the Institute acknowledges that the effectiveness of community partnerships is unclear (Kumpfer, 2000). Nonetheless, such programs remain a key component of national drug-control strategy (ONDCP, 2004). Some evidence of successful community-wide prevention programs exists, but almost all such programs are in small communities, or have narrowly focused goals (e.g., decreasing alcohol use but not drug use; dealing with a subgroup such as teenagers [see, e.g., Holder et al., 2000; Wagenaar, Murray, & Toomey, 2000]).

Evaluation findings from demonstration programs are critical to assessing the community-based approach to drug policy. Fighting Back was unprecedented not just as an investment in local communities with a commitment of nearly $88 million, but as an investment in evaluating the effectiveness of these strategies. After examining data throughout the 10 years of program implementation, the evaluation offers insights into both the ultimate utility of these programs for reducing the demand for alcohol and other drugs (AOD) and, more important, the difficulties these communities experienced in trying to effect community-wide change in demand.

LOGIC OF COMMUNITY-BASED PROGRAMS

The idea of a common or shared vision is central to most of the current forms of community-based participatory models in health and other social problem areas and was an explicit element of RWJF's Fighting Back goals (Spickard & Sarver, 1994; Jellinek & Hearn, 1991; RWJF, 1989). Similarly, the idea of strength in numbers is represented in many programs that attempt to involve all constituents in the community. For example, the Centers for Disease Control (CDC) Urban Research Centers, which share many features of the community-based programs in substance abuse, involve community members in decision-making processes from identifying the health issues of concern, to designing, implementing, and evaluating

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necessary interventions and disseminating the findings (Higgins, Maciak, & Metzler, 2001). The method is described as one that achieves collaborative partnerships and "endorses a democratic approach to research where all members participate as equals and share control over the research process" (p. 10).

In theory, community-based participation has the potential to facilitate integration of existing health and social service structures (Wandersman, Goodman, & Butterfoss, 1997). Such coordination of services is intended to decrease duplication and maximize utilization of scarce resources. Community-based programs are expected to achieve consensus among diverse interests, establish priorities, and unite opposing forces (Cottrell, 1976; Wandersman, et al., 1997). The involvement of multiple sectors from the community is intended to equalize power among various constituencies and, thus, establish legitimacy across stakeholders (Gray, 1989). In these ways, community coalitions are said to promote "buy-in" through increasing ownership and the assumption of responsibility for outcomes (Thompson & Kinne, 1990). In addition, coalitions may facilitate the implementation of a multi-systems approach to a problem, as was done in the North Karelia Project (Puska et al., 1985).

The underlying theory, however plausible, is flawed (Kadushin, Lindholm, Ryan, Brodsky, & Saxe, 2004). Full integration of health services flies in the face of competition in health services. The goal of consensus ignores long-standing community racial and class divisions and does not directly deal with these realities. Most of the coalition formation programs ignore prior attempts that date from the 1960s as well. Bringing "everybody to the table" does not take into account the fact that combining programs across stakeholders (each of whom comes with different goals, problems, and modes of operation) may produce programs that have a happenstance combination of goals and means, many of which may have little relationship to substance abuse policies. Finally, the idea that local communities should be the focus for anti-substance abuse programs may be misdirected since substance use policy is set by states and the national government. A focus on building community coalitions may actually distract from achieving successful anti-substance abuse programs. Finally, the very goal of reducing substance abuse versus the goal of reducing substance use has rarely been overtly discussed in the very creation of anti-substance abuse programs. In short, there are good theoretical reasons why broad scale community coalition programs might fail.

It should not be surprising that there is a lack of empirical evidence that documents community coalitions' capacity to improve health outcomes, particularly over time (Berkowitz, 2001; Cheadle et al., 1997; Cummings, 1999; Kreuter, Lezin, & Young, 2000; Roussos & Fawcett, 2000), although it is unclear whether the lack of efficacy is due to problems of program fidelity, unsupported theoretical

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assumptions, or difficulty in measuring community-level change. Internal structural issues (e.g., pooling resources from organizations with different cultures, resources, and commitments) (Berkowitz, 2001), community readiness (e.g., the prevailing political and economic climate) (Duynstee, 2001), and lack of scientific basis for action plans and interventions (e.g., lack of knowledge, poor fidelity to scientific models) could all contribute to the difficulty in demonstrating program effectiveness. Alternatively, even if programs adequately addressed these obstacles, lack of representative samples, lack of control of independent variables (i.e., coalitions), and the inability to identify or control confounding variables in the evaluation of outcomes could explain the lack of success (Berkowitz, 2001; Israel, Schulz, Parker, & Becker, 1998; Kreuter et al., 2000; Roussos & Fawcett, 2000).

EVALUATION OF FIGHTING BACK

The evaluation of Fighting Back assessed trends across time in substance use, prevention, and environment outcomes across Fighting Back communities, relative to comparison communities (Saxe et al., 1997). The study also provides multi-year assessments of substance abuse trends, community attitudes, use and knowledge of prevention, and treatment resources. The evaluation was designed to measure overall as well as community-specific and individual effects. It is a potential model of how research can be used to inform drug policy, although it also illustrates the difficulties of using research to influence policy.

RESEARCH DESIGN

The evaluation is quasi-experimental, with each of 12 Fighting Back sites matched to two to three comparison communities in the same state in a multilevel design (Saxe et al., 1997) (see Table 1).

The program design called for moderate-sized communities (c. 150,000 population). The communities that were eventually funded included whole cities, portions of cities, and sometimes surrounding areas. The sampled sites consisted of areas that were more urban, poorer, and with higher percentages of Black residents than the U.S. at large (see Table 2). Sites, however, were varied, from Santa Barbara, CA, which was 83% White to wards 6 and 7 of Washington, DC, which were 97% Black.

Multiple sources of qualitative and quantitative data were collected, including surveys, community indicators (mortality, fatal accidents, and crime), ethnographic and participant observation studies, and a management information system to track implementation (Saxe et al., 1997).

The surveys, the results of which are reported here, were random-digit dial telephone surveys designed to assess changes in alcohol and drug use patterns and attitudes. Carried out in the spring of 1995, 1997, and 1999, almost 45,000 individuals

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TABLE 1
FIGHTING BACK AND COMPARISON SITES, BY CITY OR PORTION OF CITY IN WHICH THE SITE OR COMPARISON WAS LOCATED

FB Site	Comparisons	FB Site	Comparisons
Charlotte, NC	Greensboro, NC Raleigh, NC Winston-Salem, NC	Newark, NJ	Camden, NJ Jersey City, NJ
Columbia, SC	Charleston, SC (North) Greenville, SC	San Antonio, TX	Dallas, TX Fort Worth, TX Houston, TX
Kansas City, MO	Columbia, MO Springfield, MO St. Louis, MO	Santa Barbara, CA	Carlsbad, CA Redondo Beach, CA
Little Rock, AK	Fort Smith, AK Pine Bluff, AK	Vallejo, CA	San Bernardino, CA Stockton, CA
Milwaukee, WI	Madison, WI Racine, WI	Washington, DC (Marshall Heights)	Baltimore, MD Washington, DC (Central)
New Haven, CT	Bridgeport, CT Hartford, CT Waterbury, CT	Worcester, MA	Fall River, MA Lowell, MA Springfield, MA

TABLE 2
SELECTED DEMOGRAPHIC CHARACTERISTICS OF FIGHTING BACK AND COMPARISON SITES, 1990 U.S. CENSUS

	Fighting Back (%)	Comparison (%)
Black	39.5	30.61
Completed college	18.7	19.4
Unemployed	9.1	9.4
Living below poverty level	21.7	21.2
Percent urban	96.5	96.8

(aged 16 to 44) were interviewed in the Fighting Back communities and their comparison sites (Beveridge, Kadushin, Saxe, Rindskopf, & Livert, 2000; Kadushin, Reber, Saxe, & Livert, 1998; Rindskopf & Saxe, 1998; Saxe et al., 1997).

SAMPLE

A total of 44,185 interviews of respondents aged 16-44 in Fighting Back and comparison communities were completed in a total of 41 communities. A national sample consisting of a random sample of the U.S. nonrural general population aged 16-44 was added in the second and third waves of the survey ($n \approx 1,650$ per wave).

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INSTRUMENT

The instrument was designed to assess substance use rates in each Fighting Back and comparison community. It included questions about AOD use, friends' AOD use, their own/ friends' attitudes toward AOD use, and perceptions of drug sales, crime, and other aspects of their neighborhood. Demographic information, including the geographic location of residences, was also collected. The instrument drew items from national surveys of substance use and dependency (Saxe et al., 1997).

MEASURES

Three categories of outcomes are reported here: substance use, treatment/ prevention, and environment. These outcomes provide evidence of Fighting Back's impact in terms of its direct effects on reduced demand indicated by substance use outcomes and its effects on the community's approach to substance use indicated by measures of treatment and prevention efforts and norms toward substance use.

Eight measures of substance use were examined, including binge drinking (five or more alcoholic drinks on one occasion in the past month), risk for alcohol dependence (largest number of drinks in any one day greater than four, past year), use of any illicit drug in the past year, marijuana use (past year, past month), use of cocaine (past year), and alcohol and drug dependence. Dependence was assessed similarly to the methods employed in the National Comorbidity Study (Warner, Kessler, Hughes, Anthony, & Nelson, 1995) in which respondents are classified as likely to be dependent based on DSM IV criteria.

Prevention outcomes assessed knowledge of prevention messages and use of treatment. Two items measured general knowledge of treatment activities: whether the respondent knew of an AOD facility in the community and whether the respondent knew people who had received treatment. The instrument also assessed attendance at AOD-related self-help meetings and participation in AOD treatment. Respondents also reported whether they had seen or heard alcohol or drug prevention messages.

Environmental outcomes included the perception of the health risk associated with using marijuana and cocaine, whether one observes drug sales in one's neighborhood, and the number of people the respondent knows who use heroin. Because heroin use is a low-incidence and socially undesirable behavior, inclusion of this variable enables estimation of prevalence using social network models (Kadushin, Killworth, Bernard, & Beveridge, 2006, this issue). None of the environment measures was normally distributed and was recoded into a dichotomous measure.

QUALITY OF SURVEY

To evaluate epidemiological outcomes of a nationwide intervention, survey quality is critical. The cooperation rate (proportion of respondents qualified as

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eligible) was high across all three waves of the Fighting Back survey, approximating 75%. The termination rate (number of respondents who terminate an interview before completion) was low (generally less than 1%). The response rate (completed interviews divided by eligible sample units) dropped slightly (from 58.9% to 57.6%) from 1995 to 1997 and saw a more pronounced decline (to 49.2%) in 1999. The response rate for the national sample showed a similar decline. This decline can be attributed to changes in the telecommunications environment (e.g., increase in cellular phones, FAX lines). The proportion of respondents who did not provide legitimate responses to questions was low (less than 2%), as were estimated rates of interviewer-induced variability.

MULTILEVEL DESIGN AND ANALYSIS

The site is the primary unit of analysis. To insure that the Type I error rate is not inflated, a mixed model with community/site as a random effect is employed. Individuals are nested within sites, and sites are nested within groups of Fighting Back and comparison sites. Program effects are tested by examining the difference between Fighting Back and comparison sites over time. Rather than determining only if there are differences between Fighting Back and comparison sites at one point in time, the evidence for a program effect is whether substance use trends for respondents living in Fighting Back sites diverged in the desired direction from those of comparison site respondents. The multilevel model developed to test the program effect consists of equations at each of three levels in the data – Level 1: individual, Level 2: site, and Level 3: state (see Livert, Rindskopf, Saxe, & Stirratt, 2001 for a full description).

SELECTION AND INCLUSION OF LEVEL 1 PREDICTORS

Individual-level characteristics were selected for inclusion in the program effects model through examination of relationships between all individual level variables and outcomes. A number of demographic characteristics of both the respondent and his/her household were measured. A subset of these items (e.g., sex, race/ethnicity) corresponded to known correlates of substance use (Kadushin et al., 1998; Kandel, 1991; Warner et al., 1995). These individual-level characteristics are included in program effects tests to minimize differences between Fighting Back and comparison sites associated with their demography. Their inclusion also controls for changes in community composition over the three waves of the survey. All predictor variables were coded so that a zero value on each represented a "typical" respondent: a White, 19-year-old male with a high school education, who was currently employed in the labor force, who lived in a household with a total income of over $10,000. Two continuous variables (i.e., 16-18, 20-44) were used to represent age with 19 years old as the reference category. For 16 through 18 year olds, the dummy codes for

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age were negative (age 16 = -3, age 17 = -2, age 18 = -1) with ages 19 and above equal to 0. Ages 20 and older were coded positively (age 20 = 1, age 21 = 2, age 22 = 3, ..., 44 = 25) with ages 19 and below equal to 0. This specification permitted the increased drug use in late adolescence and gradual decline thereafter to be more accurately modeled. Interactions between the Fighting Back variable (at Level 2) and the covariates (Level 1) were tested, thus permitting differences in the relationship between gender and drug use between Fighting Back and comparison sites to be modeled and thus partialed out of the program effect term.

SAMPLING VARIABLES

Typically, adjustments for differences in probability of selection among respondents are based on the reciprocal of the probability of selection (Lee, Forthofer, & Lorimor, 1989; Massey & Botman, 1989) and these weights along with sampling stratification are used when estimating variances. Two sampling variables (household size and number of phone lines) were included in the model as covariates; both variables were correlated with substance use, albeit weakly. The full list of covariates is displayed in Table 3.

TABLE 3
DESCRIPTION OF INDIVIDUAL-LEVEL PREDICTORS USED IN FB PROGRAM EFFECT TESTS

Variable Label	Description and Coding
Time	0 if 1995, 1 if 1997, 2 if 1999
Female	1 if female, 0 if male
Age 16-18	Respondent age under 19: -3 = 16, -2 = 17, -1 = 18, 0 = 19 & over
Age 20-44	Respondent age over 19: 1 = 20, 2 = 21, 3 = 22, ..., 25=44, & 0 = 19 & under
Black	1 if Black, 0 otherwise
Hispanic	1 if Hispanic, 0 otherwise
Other race	1 if non-White, non-Black, non-Hispanic, 0 otherwise
Neweduc	Educational attainment, centered at high school graduate (-2 = grade 0-8, -1 = grade 9-11, 0 = HS grad/GED, 1 = college 1-3 yrs, 2 = college grad, 3 = grad school/degree)
No labor	1 if not currently employed full or part time, 0 if otherwise
Poverty	1 if living in household with total income under $10,000, 0 if otherwise
HH1,HH3,HH4	Number of residents age 16-44 living in household, 2 is the reference category
Phones	1 = 2 or more phone lines in household, 0 = 1

Fighting Back program effects were analyzed using the MLWin program for multilevel analysis. For the multilevel logistic regressions, the Restricted Iterative Generalized Least Squares (RIGLS) estimation method was employed with Pseudo Quasi-Likelihood estimation (PQL).

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RESULTS

It was expected that Fighting Back communities, relative to comparisons, would yield reductions in AOD use, expansions in AOD treatment and prevention efforts within the community, increases in the perceptions of harm from drug use, and reductions in the amount of drug use activity in the neighborhood and in the social networks of individuals within the community. These predictions were tested with multilevel logistic regression models. Individuals were included in the first level, along with covariates (age, sex, race, education, employment status, income) and sampling variables (household size, phone lines). Sites were entered at the second level, along with site level effects – time, site (Fighting Back/comparison), the interaction of time with site, and the interaction of site with the individual level covariates. The third level accounted for variability due to the clustering of the multiple matched pairs by state (Livert et al., 2001).

DEMOGRAPHICS

A subset of these variables is included as covariates in program effects tests. Although comparison sites were selected because of their demographic similarity to Fighting Back treatment sites, demographic differences between treatment and comparison may remain. Several of these individual-level variables are themselves linked to substance use outcomes. For example, men are more likely to use illicit substances than are women, whereas women are more likely to misuse licit substances (such as prescription drugs) (Nelson-Zlupko, Kauffman, & Dore, 1995). Substance use and dependency occur at different rates for Blacks, Hispanics, and Whites (Kadushin et al., 1998; Kandel, 1991; Warner et al., 1995). By including demographic variables as covariates when testing program effects, differences in substance use outcomes between treatment and comparison sites due to demographic composition can be attenuated.

Overall, Fighting Back sites have a lower percentage of White respondents than comparison sites (see Table 4). This difference is due in part to the difficulty of finding comparisons for treatment sites such as Milwaukee and Washington, DC, which have a substantial proportion of Black respondents. Differences between treatment and comparison sites in terms of education, employment, and income are slight and tend to converge over the course of the survey.

SUBSTANCE USE OUTCOMES

Observed rates for each of the eight substance use outcomes examined are shown in Table 5. There appears to be very little change across time in the Fighting Back sites in relation to the comparison sites on any of these measures. This was supported by the multilevel analysis, which indicated very little variance between

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TABLE 4
COMPARISON OF FB TREATMENT AND COMPARISON SITES

	Wave I 1995 (%)	Wave II 1997 (%)	Wave III 1999 (%)
Percentage White			
Fighting Back	39.5	37.1	34.6
Comparison	49.3	48.2	45.6
Attended College			
Fighting Back	53.3	56.3	55.3
Comparison	54.0	56.3	55.3
Currently Employed			
Fighting Back	70.1	75.7	76.3
Comparison	67.7	75.9	76.4
HH Income Less than $10,000			
Fighting Back	12.6	10.7	9.9
Comparison	13.8	11.2	9.2

communities (range [0, .04+/- .006]) and community clusters (range [0.025+/- .01, 0.08+/- .04]; see Table 5 and Table 6).

Only one alcohol use measure – alcohol dependence – yielded a statistically significant Fighting Back program effect as indicated by the site by time interaction ($t = 2.88$; $p < .05$; see Table 6). This effect for alcohol dependence was very small in magnitude (odds = .82), and none of the related measures – risk for alcohol dependence and binge drinking – exhibited a similar pattern (see Table 5).

Examination of the site-to-site variation in the alcohol dependence effects revealed two possible outlier Fighting Back sites – Kansas City and Milwaukee – which have considerably lower program effects than the other 10 sites (see Figure 1). To ascertain whether the assumption of normally distributed residuals was met for the model of alcohol dependence, analyses were repeated with Kansas City and Milwaukee dummy-coded as outliers. With the influence of the two sites removed, the overall program effect for alcohol dependence was not significant (logit = -.151, SE = .078). In addition, individual program effects for Milwaukee and Kansas City were not significant. Separate analyses of each of these sites were conducted

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TABLE 5

OBSERVED RATES OF SUBSTANCE USE, TREATMENT AND ENVIRONMENT OUTCOMES[a]

Variable	*Fighting Back Sites*			*Comparison Sites*		
	1995	1997	1999	1995	1997	1999
Substance Use Outcomes						
Binge drinking	20.93	20.17	20.33	21.42	20.44	21.44
Risk for alcohol dependence	32.69	30.73	29.77	34.02	33.06	32.56
Alcohol dependence	4.64	4.03	3.69	3.73	3.98	4.14
Marijuana use past year	11.66	11.97	11.60	10.46	10.40	10.75
Marijuana use past month	6.33	6.60	6.54	5.83	6.11	6.20
Cocaine use past year	2.33	1.65	1.96	1.99	1.50	1.58
Any illicit drug past year	14.25	13.83	13.63	13.50	12.90	13.32
Drug dependence	2.59	2.81	2.87	2.60	2.41	2.72
Treatment/Prevention Outcomes						
Know people in treatment	26.41	29.73	27.62	30.58	29.54	27.12
Know place for treatment	56.18	60.56	56.68	59.17	57.59	54.99
Attend AOD meeting past year	4.06	4.58	4.27	4.18	4.04	3.85
Received AOD treatment past year	1.73	1.93	1.71	1.55	1.74	1.40
Seen or heard prevention message	81.89	77.83	78.35	83.75	79.76	79.80
Substance Use Environment						
Perceive marijuana use harm	41.97	36.32	36.24	38.84	36.05	36.48
Perceive cocaine use harm	73.71	69.56	70.59	73.34	68.76	70.49
Know heroin users	10.7	11.9	11.4	12.6	12.3	11.4
See drug sales in neighborhood	23.36	24.29	23.83	23.37	22.36	22.37

[a]Rates are for household residents aged 16-44, weighted by sampling variables of household size and number of phone lines.

using SUDAAN. There were no statistically significant effects. These follow-up analyses suggest that the overall effect for the alcohol dependence measure is not indicative of a reliable improvement in rates of alcohol dependence attributable to the Fighting Back program. None of the measures of drug use indicated any effects of the Fighting Back program (see Table 7).

TREATMENT/PREVENTION OUTCOMES

Like substance use outcomes, rates of treatment and prevention awareness exhibited very little change across time in the Fighting Back program relative to the comparison communities (see Table 5). Results from multilevel analyses indicated, however, that three of the measures yielded statistically significant program effects ($p < .05$): knowing people in treatment, knowing of a place for treatment, and

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TABLE 6
RESULTS FROM MULTILEVEL MODELS OF ALCOHOL OUTCOMES

	Binge Drinking			*At Risk for Alcohol Dependence*			*Alcohol Dependent*		
	Coefficient	**SE**	**T Ratio**	**Coefficient**	**SE**	**T Ratio**	**Coefficient**	**SE**	**T Ratio**
Intercept	0.092	0.079	1.165	1.013	0.076	13.329	-2.041	0.126	-16.198
Individual-Level Predictors									
HHSize1[a]	0.166	0.031	5.355	0.129	0.027	4.778	0.173	0.062	2.790
HHSize3[a]	0.176	0.042	4.190	0.071	0.038	1.868	0.215	0.080	2.688
HHSize4[a]	0.178	0.052	3.423	0.010	0.005	2.128	0.336	0.091	3.692
Phones[a]	-0.005	0.037	-0.135	0.060	0.032	1.875	0.125	0.068	1.838
Female	-0.987	0.041	-24.073	-0.970	0.036	-26.944	-0.762	0.083	-9.181
Black	-0.850	0.055	-15.455	-1.254	0.049	-25.592	-0.711	0.109	-6.523
Hispanic	-0.471	0.064	-7.359	-0.642	0.056	-11.464	-0.579	0.129	-4.488
Other race	-0.722	0.092	-7.848	-1.058	0.081	-13.062	-0.692	0.190	-3.642
Employed	-0.199	0.052	-3.827	-0.240	0.046	-5.217	0.175	0.095	1.842
Income[b]	0.103	0.066	1.561	-0.183	0.062	-2.952	0.121	0.119	1.017
Education	-0.064	0.019	-3.368	0.053	0.017	3.118	-0.092	0.038	-2.421
Age 16-18	0.506	0.042	12.048	0.470	0.036	13.056	0.262	0.066	3.970
Age 20-44	-0.051	0.003	-17.000	-0.057	0.003	-19.000	-0.069	0.006	-11.500
Community-Level Predictors									
Site x female	-0.036	0.055	-0.655	0.021	0.048	0.438	-0.129	0.112	-1.152
Site x Black	-0.045	0.073	-0.616	-0.050	0.065	-0.769	-0.105	0.143	-0.734
Site x Hispanic	0.086	0.083	1.036	0.062	0.074	0.838	0.215	0.161	1.335
Site x other race	-0.124	0.128	-0.969	0.139	0.109	1.275	0.150	0.248	0.605
Site x employed	-0.043	0.071	-0.606	-0.040	0.063	-0.635	-0.063	0.129	-0.488
Site x education	-0.036	0.025	-1.440	-0.042	0.023	-1.826	0.009	0.051	0.176
Site x income	-0.107	0.090	-1.189	0.028	0.084	0.333	-0.026	0.162	-0.160
Site x Age 16-18	0.000	0.056	0.000	-0.005	0.049	-0.102	0.002	0.088	0.023
Site x age 20-44	0.008	0.004	2.000	0.007	0.003	2.333	-0.002	0.008	-0.250
Site	0.050	0.092	0.543	-0.005	0.087	-0.057	0.374	0.156	2.397
Time	0.019	0.025	0.760	0.024	0.022	1.091	0.090	0.049	1.837
Site x time	-0.017	0.034	-0.500	-0.016	0.030	-0.533	-0.193	0.067	-2.881
Variance Components									
Between Community	*0.014*	*0.006*		*0.040*	*0.006*		*0.013*	*0.012*	
Between states	0.025	0.013		0.026	0.013		0.027	0.017	

Notes: [a]Sampling variables HHSize1, HHSize3, HHSize 4 indicate the number of residents aged 16-44 living in a household, with 2 as the reference category, and number of phone lines in the household (1 or more). [b]Income coded as 1 = living in household with total income under $10,000, 0 otherwise.

having seen or heard prevention messages in the past six months (see Tables 5 and Table 8). Similar to alcohol dependence, each was associated with very small effects with odds ratios between 1 and 1.12. For example, for knowing a place for treatment, respondents in the Fighting Back sites were 1.12 times more likely to report knowing of a place for AOD treatment across time than respondents in comparison sites. Treatment awareness, however, did not increase in the Fighting Back sites across time.

There was also a small effect for the awareness of drug prevention messages. Overall, a high percentage of respondents reported having seen or heard prevention

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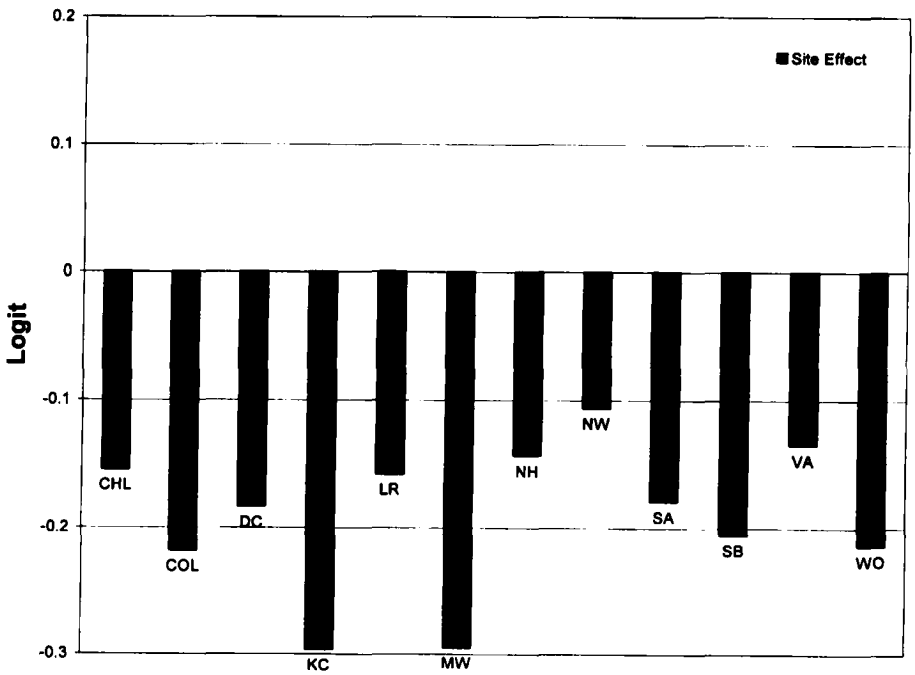
FIGURE 1
SITE-BY-SITE VARIATION: ALCOHOL DEPENDENCE



messages (about 85%). The rate decreased rather than increased in the Fighting Back sites, but not to the same degree as comparison sites, where the decline was more substantial.

SUBSTANCE USE ENVIRONMENT

Measures of the substance use environment of the community yielded little positive evidence of the effectiveness of the Fighting Back program. There appeared to be a decrease in the perceptions of marijuana as a great risk in the Fighting Back sites, and this decrease was greater than in the comparison sites (see Table 5), an effect opposite to what would be predicted, but again the effect was very small (see Table 9).

DISCUSSION

The present study found no interpretable positive effects of the Fighting Back program on community-wide rates of substance use. The findings add to a body of literature that reports disappointing findings about the effectiveness of broad-based community prevention programs (Berkowitz, 2001). Although some significant

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effects were obtained, such fluctuations in outcomes are expected in a multi-site, quasi-experimental study. The lack of interpretable patterns buttresses our conclusion that enthusiasm for community-based substance abuse programs is unsupported by research evidence.

Given very large samples and the ability to detect even small changes, the small number of significant outcomes is striking. The central question is whether the results are robust and can be the basis of policy. There are two contrasting possibilities: either the research hypothesis is true but our method of testing was inadequate, or the research hypothesis is wrong and the failure to confirm should be a signal to revise the hypothesis regarding the utility of community-based programs for AOD demand reduction (Rindskopf, 2001).

The inherent methodological limits include both design and measurement issues. Thus, for example, the quasi-experimental design may not control for diffusion to comparison sites. This argument, however, is plausible only if the program was not, in fact, novel and if the 29 comparison communities were able to implement equally effective programs. Data from multiple comparison sites makes this argument difficult to sustain. Irrespective of comparisons, AOD use within Fighting Back sites did not decrease nor did treatment and prevention outcomes increase beyond what one would expect to see by chance. If community norms – indicated by either AOD use or attitudes – had changed and those changes were robust, they should have been detectable.

It is also possible that the measures used to assess AOD use were insensitive. Survey estimates of drug use can underestimate rates, and interpretation of trends across time is fraught with potential error (NRC, 1992, 2001). The surveys, however, were compared with other data at a number of points. For example, trends in crime and fatal accidents in these communities were indistinguishable from national trends (Beveridge et al., 1997).

Fieldwork suggests that there were serious implementation problems and that no community implemented the originally envisioned community-wide system of care (Lindholm, Ryan, Kadushin, Saxe, & Brodsky, 2004). Thus, the findings may be explained by the fact that the "treatment" was not implemented fully. Residents often were less interested in prevention and treatment at the individual level than in environmental improvement and social support. They wanted to clean up neighborhoods, destroy crack houses, and attack crime. Other analyses of the survey data demonstrate that across communities the most disadvantaged neighborhoods differ from "mainstream America" not in rates of drug use among residents, but in the visibility of drug problems and the crime associated with drug markets (Kadushin et al., 1998; Saxe et al., 2001).

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Quantitative assessments of the extent of implementation of the program were also developed (Hallfors, Cho, Livert, & Kadushin, 2002). The extent of implementation was not related to the outcome measures. In fact, there is some suggestion in the data that concentration of communities on developing effective coalitions was negatively related to positive program outcomes. Perhaps in some communities, forming effective coalitions was such a daunting task that it distracted from the main outcome goals of the intervention.

Although limited implementation may explain the lack of systematic community level changes, even if the program envisioned were implemented it is not clear whether reduced AOD outcomes would result. Accumulated evidence from Fighting Back and other studies of community AOD programs does not support the faith placed in these programs. Thus, the evaluation of CSAP's Community Partnership Program (Yin, Kaftarian, Yu, & Jansen, 1997) is consistent with the Fighting Back findings. The CSAP Partnership Program developed in part in response to the large number of communities that responded to the RWJF call for proposals. Although similar to Fighting Back in the basic approach of involving communities in defining and solving their own community-specific substance abuse problems, CSAP did not specifically emphasize development of a single community-wide system of care as did Fighting Back.

The result of the CSAP's approach, however, was similar. Out of 251 funded communities, 24 were selected and matched to nonpartnership comparison communities. Overall, there were very few significant effects. Two use measures – illicit drugs and any alcohol – are reported to have yielded differences within subgroups (for one measure, adult males; for another, 10th grade males). In addition, some subgroup effects were significant in different sites. There were, however, no apparent controls for multiple tests, unconventional one-tailed tests of significance were employed, and only results in the predicted direction were reported. Other results significant at the one-tailed level were in the opposite direction. Further, there was no evidence that attitudes toward substance use had changed in partnership communities, nor was there evidence that problem substance use such as binge drinking or dependence had been lowered.

One challenge in the use of social science research to inform drug policy is that the "context" is dynamic. The RWJF reacted to a crisis associated with high rates of drug use in the mid-1980s. By 1988, however, when the program was announced, drug use had declined significantly. By 1992, when program implementation began, drug use was already at a comparatively low level, which was maintained nationally throughout the duration of program implementation (Office of Applied Studies, 1999). It is unclear whether the significant reduction in drug use observed in the late 1980s can be attributed to cyclic trends in drug use (Winick, 1997), to increased

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awareness of and attention to the problem of drug use, or to the effectiveness of the increased criminalization of drug use. Although it may not be possible to attribute cause, drug use changed dramatically between the time Fighting Back was conceived and implemented: self-reported use declined, and this was accompanied by an increase in rates of incarceration for drug-related offenses (U.S. Department of Justice, 1997).

The declines that began in the late 1980s may explain the enthusiasm of communities and those who endorse Fighting Back. The evaluation, which assessed changes attributable to the program, reports on use during a time when rates had already declined nationally. This discrepancy in the context of substance use prior to and during program implementation highlights the need for better use of research to design drug policy.

If careful epidemiological data had been analyzed prior to program implementation, perhaps different approaches might have been implemented. The lack of such research, however, and the fact that the program was in full bloom by the time that research outcomes were available, made it difficult for research to influence the program. Perhaps indicative of the absence of coordination and feedback between research and program implementation, it was decided to end data collection while the program continued. Data were not helping to justify the program and there was no middle ground between those who believed the program was a failure and those who believed it was a success.

There is a strong possibility that the basic model of broad-scale community coalitions is faulty. This may be responsible, in part, for the division between research and intervention. The logic model for intervention does not adequately consider the problems of implementing community-wide coalitions under conditions of ethnic, racial, and class divisions or the competitiveness of major service providers. It also does not consider how the intervention may be co-opted by "grass roots" constituents the program itself is trying to co-opt – to win over to the direct goal of fighting substance abuse rather than first improving neighborhood economic conditions – or how to cope with the "residue" of past interventions in the community. The organizational realities of conflicting goals and means make it difficult to bring everyone to the table and the model does not address the fact that much in substance use policy is controlled at the state and national levels. The model presupposes "community" while at the same time striving to create it. Finally, the model has never directly addressed whether it is concerned with substance use or substance abuse – whether the goal should be the reduction of use or a more narrow focus on the most problematic abuses of AOD. In short, intervention models do not adequately make use of existing social science theory that might have alerted policy makers to the complexities of large scale reform. The gap between research

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and application is as much a gap in the way social science theory is grasped as it is a gap in understanding the complexities of multivariate modeling.

POLICY IMPLICATIONS

After more than 10 years of program development and nearly $88 million of funding, matched by even more substantial local community and federal money, research indicates that the coalitions have not had demonstrable impact on AOD use. Whatever the benefits of these programs, they appear to have been "oversold." They were offered as a control remedy, but the problem is far more complex.

Involving those affected by a problem in designing its solution seems reasonable; yet this "bottom-up" strategy needs to be tested before being widely adopted. Fighting Back's approach of "bringing everyone to the table" to generate concerted action seemed promising; however, there was little evidence to validate its premise, and substantial theoretical arguments suggested a different outcome. Evidence from fieldwork suggested the difficulty of bringing together public bureaucracies with one another or with grassroots groups. Local organizations vied to co-opt one another, and neighborhood groups struggled with the community's leadership over the direction of the program and use of resources. In any case, none of these efforts led to measurable changes in community rates of substance use; in fact, as noted, a negative association was observed between effort expended and outcomes (Hallfors, Cho, Livert, & Kadushin, 2002).

Broad-based community involvement is, perhaps, a necessary condition to solve a multifaceted problem such as substance abuse, a challenge that draws heavily on ideas that communities have "social capital" (Kadushin, 2004). However, it is almost certainly not a sufficient condition, given the limited social capital – political will, resources, and skills – that most American communities can call upon. Without a theory of action based on solid social science to guide efforts, community-based programming may simply follow the "squeaky wheel" model, by which the groups that make themselves heard most insistently drive the agenda.

The movement to develop community coalitions remains strong. The Community Anti-Drug Coalitions of America (CADCA) have more than 5,000 community coalition members and partnerships with a host of federal agencies (CADCA, 2005). The national drug control strategy calls for an increase in the number of community-based programs, citing Fighting Back communities as exemplars of programs that show results (ONDCP, 2002a). The belief that community programs can ameliorate substance abuse problems has become part of the accepted wisdom (ONDCP, 2002b).

The value of using theory and evidence to guide policy making lies not just in showing what works, and under what conditions, but also in showing and explaining

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what does not work. Perhaps the most important function is to advance theories why some things work and others do not. Along with fundamental research on the psychological, neuroscience, and physiological mechanisms of addiction and treatment processes, rigorous community evaluation and theory development should be a critical component of development of national drug policy. It should be used not only to "grade" policy makers, but also to help them determine where energies and resources might more usefully be directed and what questions need to be asked. Even when the grade is disappointing, the data need to be understood so that stakeholders and policy makers can understand and inform future policy making and program development (Kadushin et al., 1998).

There has been, without question, a failure to attend to the data. One reason is the difficulty of translating abstract theory and complex methods into policy-relevant terms. Another reason is structural: Social science experts are often not part of the development of policies but enter, as we did in the case of Fighting Back, only after the fact to "give grades." And some of the failure is the result of the very opposite – overinvolvement and a lack of perspective. When social scientists get involved in implementation and program planning, they sometimes become vested in the status quo of the change models being advocated. That makes it difficult to step back and accept negative findings. It is easier to blame the methodology than to alter our theories.

The process of policy makers' use of research has been described as "knowledge creep and decision accretion" (Weiss, 1980). Most research does not create earthquake-like changes that reshape an entire landscape. But it can record and analyze tremors that lead to larger changes. Engaging in social research is not a panacea for flawed policy process, but it does provide needed balance. In the case of drug policy, it can help ensure that solutions to one of our most vexing social problems are implemented as systematically and effectively as possible and that unproductive programs are pursued with maximum use of the best, current, and valid data.

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