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Increasing the Prevalence of Successful Children: The Case for Community Intervention Research

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This paper makes a case for research on community interventions on child rearing. Sufficient evidence has accumulated about the development of children's problem behavior to justify evaluating efforts to reduce the prevalence of these problems in whole communities. The contextual risk factors for diverse child behavior problems are well understood, and interventions to ameliorate individual risk factors have been developed and evaluated. Because interventions with individual children have proven to be efficacious, it is now appropriate to direct energy toward reducing the prevalence of children with behavior problems. At the same time, existing interventions have limitations. Community interventions may be needed to modify the larger social context for families. This paper enumerates possible components of a community intervention to improve child-rearing outcomes. Existing evidence indicates that communities would benefit from making parent training and family support programs available to parents. Validated methods of identifying and remediating academic and behavioral problems in schools are available, but influencing schools to adopt them remains a problem. Community organizing could mobilize communities to allocate the resources necessary to support such parenting and schooling programs as well as encourage their adoption. Media campaigns could foster community support and directly influence parenting practices. Efforts to modify peer influences to use illicit substances have received empirical support; similar efforts may be relevant to preventing other problems. The development of a science of community interventions on child rearing is hampered by overreliance on randomized control trials. For this reason, two examples of time-series experimental evaluations of community intervention components are described here.

Key words: community intervention, prevention, child behavior, parent training

This special section of *The Behavior Analyst* documents the contributions of behavior analysts to the clinical treatment of a wide variety of human behavior problems. However, clinical interventions are probably insufficient to prevent and ameliorate many of these problems (Biglan, Glasgow, & Singer, 1990). A clinical intervention constitutes a tiny portion of the functional context for human behavior. It is unlikely that we can modify all of the other problematic aspects of human environments solely through clinical methods. Even if we could, we do not know how to disseminate effective interventions and we could not train and pay for enough clinicians to meet the need for intervention. Preventing and ameliorating problems of human behavior require the exploration of additional ways to influence human behavior.

Research on community interventions to affect child rearing is one promising direction. Due to progress in scientific research on child rearing, decreasing the prevalence of youthful problem behavior in whole communities may now be possible. Various types of problem behavior, such as antisocial behavior, academic failure, high-risk sexual behavior, and substance abuse, are sufficiently interrelated that it is appropriate to develop and test programs designed to prevent the entire range of problem behavior. The social context that influences these problems is reasonably well understood (e.g., Patterson, Reid, & Dishion, 1992). By improving a small number of parenting and schooling practices, we may be able to reduce the prevalence of many kinds of problem behavior. At the same time, limitations of parent training and school improvement procedures suggest a need for more comprehensive interventions that address the entire range of contex-

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tual conditions that affect children or their social environment.

THE CASE FOR COMMUNITY INTERVENTIONS ON CHILD REARING

The Relations Among Different Kinds of Problem Behavior

Growing evidence indicates that different kinds of problem behavior are interrelated in both middle and late adolescence. Jessor and colleagues (Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1988; Jessor & Jessor, 1977) have found strong and consistent positive correlations among delinquent behavior, problem drinking and drug use, and sexual precociousness; others have noted similar relations (Farrell, Danish, & Howard, 1992; Osgood, Johnston, O'Malley, & Bachman, 1988; Vingilis & Adlaf, 1990). Across diverse studies, substantial positive correlations have been found among the following kinds of behavior: antisocial behavior, cigarette smoking, alcohol use, use of marijuana and other illicit drugs, precocious sexual activity and risky sexual behavior, dangerous driving, poor school performance, and general risk taking (e.g., Bachman, Johnston, & O'Malley, 1981; Barnes, 1984; Biglan, Metzler, et al., 1990; Brennan, 1979; Dryfoos, 1990; Elliott & Morse, 1987; L. Epstein & Tamir, 1984; Hawkins, Lishner, Catalano, & Howard, 1986; Jessor, 1987a, 1987b; Loeber & Dishion, 1983; Malcolm & Shephard, 1978; P. Miller & Simon, 1974; Wechsler & Thum, 1973; Welte & Barnes, 1987; Zabin, 1984; Zelnik, Kantner, & Ford, 1981). Multivariate analyses have shown that a single common factor accounts for the relations among these kinds of behavior (Donovan & Jessor, 1985; Donovan et al., 1988; Farrell et al., 1992; Osgood et al., 1988). Where gender differences have been investigated, these interrelations have been found to hold for both males and females (Donovan & Jessor, 1985; Farrell et al., 1992). Thus, adolescents engaging in high rates of one problem behavior are also likely to be engaging in high rates of other behavior.

The Social Context for Child and Adolescent Behavior Problems

Evidence is mounting that engagement in problem behavior is influenced by the peer, family, and school contexts (Dryfoos, 1990). These contexts are, in turn, influenced by more general factors such as poverty and the social organization of communities.

Peer influences. The strongest influence on problem behavior during adolescence appears to be the peer group. Peer influence contributes to adolescent sexual activity (Billy & Udry, 1985a, 1985b; Brooks-Gunn & Furstenberg, 1989; Capaldi, 1991; Delamater & MacCorquordale, 1979; Hagenhoff, Lowe, Hovell, & Rugg, 1987; Hofferth, 1987; Lowe & Radius, 1987; Metzler, Noell, Biglan, Ary, & Smolkowski, 1993), cigarette smoking, problem drinking, and marijuana use (Biglan & Lichtenstein, 1984; Hawkins et al., 1986; Jessor, 1987a; Kandel, 1985; Malcolm & Shephard, 1978; Newcomb, Maddahian, Skager, & Bentler, 1987; Rachel, Williams, & Brehm, 1975; Sunseri et al., 1983), and a composite measure of drinking, marijuana use, delinquency, and early sexual experience (Jessor & Jessor, 1977).

Parental influences. Parenting practices influence the development of problem behavior both through direct effects on child and adolescent behavior and through their influence on who adolescents associate with. Whether adolescents associate with deviant peers consistently has been shown to be influenced by what their parents do. Poor parental monitoring, parental permissiveness, and inconsistent limit setting are associated with a number of individual behavior problems, such as academic failure (Clark, 1983; Dryfoos, 1990), sexual behavior (Kastner, 1984; B. Miller, Olson, & Wallace, 1986), substance use (Coombs & Landsverk, 1988; Halebsky, 1987; Newcomb et al., 1987; Prendergast & Schaefer, 1974), and antisocial behavior (Canter, 1982; Loeber & Dishion, 1983; Patterson et al., 1992). Adolescent/parent conflict and poor family problem-solving skills have been shown to be as-

sociated with greater levels of smoking, drinking, and marijuana use (Halebsky, 1987; Hawkins et al., 1986; McCubbin, Needle, & Wilson, 1985; Prendergast & Schaefer, 1974).

However, to focus on adolescent problem behavior alone and would be a mistake. The path toward problem behavior in adolescence begins in the home even before children start school. Patterson and colleagues (Bank, Patterson, & Reid, 1987; Patterson, DeBaryshe, & Ramsey, 1989; Patterson et al., 1992; Reid & Patterson, 1991) have developed and validated a longitudinal model of the development of antisocial behavior that provides strong and consistent support for this view. The model proposes that family management practices in early childhood—specifically, high levels of coercive discipline and low levels of parental involvement with their children—are strong determinants of early aggressive behavior. Aggressive behavior in turn puts the child at high risk for both social rejection by normal peers and academic failure in the classroom. These two negative outcomes contribute to a drift toward deviant peers, where the aggressive child joins other rejected, aggressive children. In this deviant peer group, antisocial behavior is then trained, shaped, and reinforced, producing the problems noted above (e.g., Dishion, in press; Kandel, 1985; Billy & Udry, 1985a, 1985b).

Recent studies have shown that the Patterson model of the development of antisocial behavior is generalizable to the development of other behavior problems, including adolescent drug use (Dishion, Capaldi, & Ray, in press), the onset of early sexual behavior (Capaldi, 1991), high-risk sexual behavior (Metzler et al., 1993), and general problem behavior in adolescence (Metzler et al., 1993).

School influences. Schools are another important social context for the development or prevention of problem behavior. School behavior management procedures influence the developmental course of problem behavior among children and adolescents (Bullis & Walker, 1993). Teaching effectiveness influences academic success or failure, and academic failure predicts the development of depression (Kellam et al., 1991), conduct problems (Patterson, 1982), and tobacco and other substance use (Hawkins, Catalano, & Miller, 1992). Conversely, being a good student is a protective factor that reduces the risk of behavioral and emotional disorders (Rae-Grant, Thomas, Offord, & Boyle, 1989).

The larger context for the development of problem behavior. More general factors also influence adolescent adjustment. Economic hardship and low socioeconomic status correlate positively with aggressive behavior (Capaldi & Patterson, in press; Conger et al., 1992; Dryfoos, 1990; Elliott & Ageton, 1978; Loeber & Dishion, 1983; Moos, 1976), sexual activity (Bingham, Miller, & Adams, 1990; Fox, 1980; Hagenhoff et al., 1987; Hofferth, 1987; Zelnik et al., 1981), and academic failure (Dryfoos, 1990). Compared to youth from intact homes with two natural parents, adolescents from nonintact homes engage in more delinquent behavior (Canter, 1982; Capaldi & Patterson, in press; Dornbusch et al., 1985; Loeber & Dishion, 1983), increased tobacco, alcohol, and drug use (Bachman et al., 1981; Nolte, Smith, & O'Rourke, 1983; Saucier & Ambert, 1983; Selnow, 1987; Stern, Northman, & Van Slyck, 1984; Wechsler & Thum, 1973), more frequent or earlier sexual activity (Hofferth, 1987; Newcomer & Udry, 1987; Stern et al., 1984), and less regular contraceptive use (Zelnik et al., 1981). In the Patterson model, these factors, such as family structure and economic hardship, are hypothesized to affect adolescent antisocial behavior indirectly to the extent that they disrupt day-to-day family management practices. For example, economic hardship contributes to more irritable, coercive parenting practices (Conger et al., 1992; Reid & Patterson, 1991). Divorce and single parenthood disrupt consistent parental monitoring (Reid & Patterson, 1991). Families' social isolation and lack of social support are also associated with poorer parenting behavior among moth-

ers of young children (Andresen & Telleen, 1992); intra- and extrafamilial conflict has an adverse impact on parenting practices (Dumas, 1986; Reid & Patterson, 1991).

In summary, there is extensive evidence that a wide range of child and adolescent problem behavior is influenced by associations with deviant peers, inadequate parenting practices, problematic schooling practices, and a larger context that makes parenting difficult.

The Efficacy and Limitations of Existing Interventions

Both the efficacy and the limitations of parenting, peer, and school interventions point to the need for research on community interventions. Evidence of their efficacy suggests that it is appropriate to turn to the question of whether the prevalence of child problem behavior can be reduced. Evidence of their limitations points to the need to change variables at the community level that might enhance the effects of interventions such as parent training.

Studies of individual families have shown that youthful problem behavior such as aggressiveness can be reduced through parenting skills training (Kazdin, 1987; McMahon & Wells, 1989). A logical next step is to examine whether the prevalence of such problems can be reduced by delivering parenting skills training to all parents who might benefit from it.

Parenting skills training has not proven to be effective for parents who are socially isolated and who experience numerous other stressful events such as aversive encounters with family members (McMahon, Forehand, Griest, & Wells, 1981) or service providers (Wahler, 1980a, 1980b). Getting parents of high-risk youth to participate in parenting skills training programs has also proven to be difficult (Fontana, Fleischman, McCarton, Meltzer, & Ruff, 1989; Hawkins, Catalano, Jones, & Fine, 1987). Although such barriers are typically beyond a clinician's reach, and thus unlikely to be overcome by more intensive or innovative clinical interventions, a community intervention might overcome them. A community intervention could reach parents through schools, churches, direct mail, and mass media, and could mobilize the community to change aspects of the social environment that clinicians cannot affect.

A similar argument can be made regarding peer-focused prevention programs. School-based smoking prevention programs focus primarily on reducing peer influences to use tobacco and other substances. Such programs have a deterrent effect on smoking (e.g., Ary et al., 1990; Biglan, Glasgow, et al., 1987; Biglan, Severson, et al., 1987; Flay, 1985; Hansen & Graham, 1991) and perhaps other substance use (Tobler, 1986). Community interventions could be instrumental in ensuring that all schools adopt these programs. The effectiveness of school-based programs is limited, however. A significant proportion of youth are not affected by these strategies, and long-term follow-up suggests that results are not maintained (e.g., Flay et al., 1989). These limitations have prompted a number of investigators to turn to community interventions (e.g., Biglan & Ary, 1989; C. Johnson, Hansen, & Pentz, 1986). Community interventions may modify peer influences by mobilizing additional channels for reaching youth (e.g., Biglan et al., in press) while, at the same time, affecting other influences such as parents (Biglan et al., in press; C. Johnson et al., 1990) and business organizations (Biglan et al., 1993).

Community interventions may also be relevant to improving schools. Research has established that direct instruction can significantly increase academic achievement among low-achieving children (Engelmann, Becker, Carnine, & Gersten, 1988) and can prevent later academic failure and school dropout (Gersten, Keating, & Becker, 1988). Moreover, methods of identifying and remediating social and behavioral problems of youth have been delineated (e.g., Bullis & Walker, 1993; Greenwood et al., 1979). However, the validation of these effective school practices has not led to their

widespread adoption (Watkins, 1988). A community intervention that advocated validated teaching practices might overcome some of the barriers to their adoption. It could increase community support for effective schooling practices. It could increase parental involvement in their children's academic activities (J. Epstein, 1989). In the absence of such advocacy, disadvantaged youth are at high risk of being subjected to invalid and demonstrably ineffective teaching procedures (McGill-Franzen, 1992).

The Need for Empirical Evaluation of Community Change Efforts

Research on community interventions is also needed because many community change efforts now underway are receiving little empirical evaluation (e.g., Lofquist, 1983). For example, the Center for Substance Abuse Prevention has funded numerous community interventions to prevent substance abuse, but few resources have been directed at evaluating them (DeJong, 1993). There is no guarantee that these efforts will be successful. Even interventions based on the best evidence about the correlates of problem and prosocial behavior and the efficacy of programs targeted at children and families may prove to be worthless or even harmful. We will never know without evaluation. Even if these programs are evaluated, the effort will have limited value unless it is organized to develop and test generalizable principles about the classes of independent variables that affect the incidence and prevalence of problematic and prosocial behavior of youth.

THE CONCEPT OF COMMUNITY INTERVENTION

The term *community intervention* has not been precisely or consistently defined. Is an intervention that consists mostly of mass media a community intervention (e.g., Maccoby, Farquhar, Wood, & Alexander, 1977)? Is an effort to organize community leaders a necessary part of a community intervention (e.g., Bracht & Kingsbury, 1990)? What must be targeted in order for an intervention to be considered a community intervention? One could simply define community interventions in terms of a particular set of activities designed to affect certain groups or practices in a community. However, others might stipulate other definitions, and no clear criterion is available for choosing among them.

From a functional contextualist perspective (e.g., Biglan, 1993), we are seeking generalizable principles about the relation between contextual variables and the phenomenon of interest. One approach to defining community interventions, then, is to clarify the dependent and independent variables that are involved in such interventions.

The Dependent Variables in Community Interventions

Any change in a community can be conceptualized in terms of a change in the incidence or prevalence of the behavior of defined populations of individuals or in the practices of defined populations of groups. Examples of the incidence of individual behavior include the number of teenagers in a school district who begin smoking in a given year, the number of preschool children in a city who receive immunizations in a year, and the number of burglaries in a city in a month. Examples of the prevalence of behavior include the proportion of 14-year-olds who smoked cigarettes in the past week, the proportion of parents of first graders who do homework with their children at least once a week, and the proportion of individuals between 40 and 65 who consume less than the recommended daily maximum of sodium per day.

A targeted change often involves the interlocking behavior of two or more people. For example, an effort to reduce the incidence of marital discord in a community must focus on the interactions between husband and wife. Efforts to increase parental monitoring of children's out-of-home behavior may focus on increasing communication between par-

ents and children. The actions of formal organizations provide additional example. Voluntary civic organizations may give money or take on specific projects aimed at improving the community for child rearing; one could examine the proportion of voluntary civic organizations that conduct projects to benefit families. Enactment of an ordinance by the city council is another example of the action of a formal organization.

One advantage of this approach is precision. Community interventions have not always been clear about what they expect an intervention to achieve. Precision about the dependent variables contributes to scientific advance and to researchers' accountability to the community. If we are unclear about expected outcomes, how can we develop a replicable science of the relation between interventions and community practices? If we do not clearly describe the targeted outcomes to community members, how can they decide whether they want the intervention to go forward? The behavior of individuals and actions of groups can be as clearly defined as the populations themselves. If time and money are to be expended in efforts that purport to be of benefit to the community, what specific actions of groups and individuals are expected to result?

Some might object that some aspects of community change, such as a sense of well-being, would not be captured by this approach. However, psychological or even spiritual experiences are readily included. For example, one can examine the proportion of people who report defined levels of well-being over a given time period for any given population.

A second advantage of this approach is that it focuses squarely and openly on change. There is no guarantee that behavioral science research will contribute to our ability to change behavior; much effort can be expended developing correlational models of behavioral phenomena that do not elucidate manipulable variables (Biglan & Hayes, in press). By examining community interventions in terms of their effects on the incidence or prevalence of a behavior or group practice, we maintain a focus on how we can change these phenomena. Research on community interventions can be evaluated in terms of how much knowledge it contributes about how to change the incidence or prevalence of a behavior or a group practice. Over time, research evaluated by this standard is likely to accumulate effective means of bringing about change.

The Independent Variables

The independent variables in community interventions may similarly be specified in functional or contextual terms (Biglan, 1993). A community intervention is one that affects the incidence or prevalence of individual behavior or group practice. A science of community interventions seeks to identify variables that affect these targets. For example, a media campaign would be considered a community intervention if it changed the incidence of parental monitoring of adolescent children. An effort to organize parents into a network would be a community intervention if it affected the prevalence of parenting practices.

In contrast to topographic or structuralist approaches to definition, this approach seeks to define concepts that involve functional relations between community change efforts and the incidence or prevalence of behavior or group practices. The justification for this approach is its contribution to the identification of orderly relations between change efforts and behavior or group practice (Skinner, 1972).

Knowledge of which independent variables will affect child-rearing practices remains limited. The following section delineates those variables that existing evidence suggests have the greatest promise.

POSSIBLE COMPONENTS OF A COMMUNITY INTERVENTION ON CHILD REARING

This section delineates the components that might be included in a community intervention to prevent youthful problem behavior. Components are dis-

cussed in light of empirical evidence showing their influence on factors that contribute to youthful problem behavior.

Addressing Parental Influences on Child Behavior

Parent training. Considerable evidence shows that critical parenting skills can be altered (e.g., Kazdin, 1987; McMahon & Wells, 1989). Parenting skills training brings improvements in these skills (Patterson, Reid, & Dishion, in press) and child behavior as well (McMahon & Wells, 1989). The prevalence of youthful problem behavior in communities could be reduced by ensuring that all parents who need such programs receive them.

There are a number of impediments to achieving widespread effects on parenting practices, however. Most communities do not have these types of training programs widely available. Many of the parents most in need of such programs are disinclined to seek training or to remain in it (Fontana et al., 1989; Hawkins, Catalano, & Kent, 1991; McMahon et al., 1981). The effects of even the best available parenting skills training are limited by other contextual factors affecting families, such as poverty and social isolation (McMahon & Wells, 1989).

It is possible to provide effective parenting programs in a group format (e.g., Dishion, Kavanagh, & Reid, 1989; Hawkins, Catalano, & Fine, 1987), and even brief video presentations have been shown to affect parenting skill (e.g., Webster-Stratton, Kolpacoff, & Hollingsworth, 1988). However, even these innovations in treatment delivery will have limited impact unless we can help communities to organize a social system that makes such programs effectively available on a continuing basis.

Social support for families. Social support is an important protective factor for parents. Three types of social support appear to be beneficial to adult functioning: (a) esteem or emotional support, (b) instrumental or material support, and (c) informational support (Cohen & Wills, 1985). There is considerable evidence that family support improves child and parent functioning at the same time that it increases social support for parents (Dokecki, Hargrove, & Sandler, 1983; Heinicke, Beckwith, & Thompson, 1988; D. Johnson, 1989; Kagey, Vivace, & Lutz, 1981; McGuire & Gottlieb, 1979; Pierson, 1988; Polirstok, 1987; Ramey, Bryant, Campbell, Sparling, & Wasik, 1988). Social support buffers the effects of stressful events and directly contributes to well-being (Cohen & Wills, 1985; Gottlieb, 1988; Kessler & McLeod, 1985). Social support affects parents' behavior toward their children (Andresen & Telleen, 1992) and the success of family interventions for infants and young children (Heinicke, 1990).

Effective programs have typically combined parent education with one or more of the following elements of family support: home visits or other outreach efforts to establish a warm working relationship with an interventionist, parent support groups, linkages to other health and social services in the community, and efforts to address a variety of practical and social needs. Here too an increase in the availability of community-based social support programs is needed. Below we suggest some ways that community organizing and advocacy could help to expand such programs.

Peer Influences

Research on organized efforts to intervene in peer-group processes has been limited thus far to school-based drug abuse prevention programs that focus on reducing peer influences to use these substances. Efforts to reduce peer influences to engage in other problem behavior apparently have not been explored.

School-based programs are only one avenue to affect peer influences, and are perhaps not the most powerful. In prevention work in communities, we are finding that many young people become enthusiastically involved in community programs outside of the schools to discourage tobacco use (Biglan et al., 1993). With some guidance from adults, young people devise activities in the commu-

nity that might influence other youth not to take up tobacco. In composing these programs, care is taken to include young people who are diverse in risk for tobacco use to make it more likely that a broad range of young people will be influenced.

One advantage of youth involvement is that messages directed at youth by youth are more likely to be persuasive than ones designed by adults. Youthful messengers may be more credible than adults. Finally, these activities are themselves positive social activities that may be incompatible with problem behavior.

Research must evaluate whether mobilizing young people to influence their peers about behavior other than substance use is worthwhile. Certainly, given the strong evidence that most problem behavior is influenced by peers, efforts of communities to mobilize youth on behalf of positive social behavior bear further evaluation.

School Influences

A number of school practices could protect children from developing behavior and academic problems. Behavior management practices that remediate aggressive and oppositional behavior among individual children have been extensively validated (e.g., Bullis & Walker, 1993; Greenwood et al., 1979). Effective discipline practices can reduce the general level of aggressive and oppositional behavior in entire schools (e.g., Bullis & Walker, 1993). Ensuring high levels of academic achievement can also reduce aggressive behavior (Kellam et al., 1991; Rae-Grant et al., 1989; Werthamer-Larsson, Kellam, & Wheeler, 1991). Effective instructional practices clearly protect children from academic failure. For example, direct instruction procedures can significantly increase academic achievement among low-achieving children (Engelmann et al., 1988) and can prevent later academic failure (Gersten et al., 1988).

Unfortunately, empirical progress on effective instruction has yet to be translated into changes in the prevalence of social, behavioral, and academic problems of children. Efforts to implement effective teaching strategies are often unsuccessful (Fullan, 1982; Gersten & Woodward, 1992; Guskey, 1990; McLaughlin, 1990). Teacher change models have had limited success because they lack specificity, concreteness, and intensity (Fuchs & Fuchs, 1986) or because they require teachers to substitute new practices for old rather than allowing them to assimilate new ideas into current teaching styles (Gersten & Woodward, 1992). The evidence suggests that teachers' adoption of effective practices would be fostered by a program of staff change that (a) incorporates specific techniques (Carnine & Gersten, 1985; Fullan, 1982), (b) enhances teachers' current teaching styles rather than dramatically altering them (Gersten & Woodward, 1992; Smylie, 1988), and (c) offers support in the form of on-site technical assistance (Gersten, Carnine, & Woodward, 1987).

Parent involvement in their children's school work can also enhance children's academic success (Engelmann et al., 1988; J. Epstein, 1989). Children who receive regular parent tutoring at home make significant gains in reading over control subjects, even when differences between children (e.g., IQ, child-rearing practices) are controlled (Hewison & Tizard, 1980; Tizard, Schofield, & Hewison, 1982; Topping & Whitely, 1990). Leach and Siddall (1990) report that training parents in structured instructional approaches produced substantial gains in reading performance. Thus, a community intervention to prevent child problem behavior should include school-prompted parent–child interactions designed to enhance children's language skills.

In summary, communities that wish to ensure the success of the largest possible proportion of their children must see to it that their schools adopt effective instructional and behavior management practices and that they involve parents in support of their children's academic activities. As suggested below, the promotion of these practices in schools may

be facilitated by the other components of a community intervention.

Community Organizing

Theoretical analyses of the selection of cultural practices suggest that the child-rearing practices for a community are influenced by that community's dominant economic activities (Biglan, 1992). Recent analyses of the economic consequences of our failures in child rearing indicate that both business leaders and the poor and disadvantaged are likely to benefit if we can increase the proportion of our young people who are academically and socially successful (Reich, 1990). When trying to help communities improve child-rearing practices, it may be vital to articulate how influential community leaders will benefit from these programs.

Organizing influential people and organizations in a community to work on child-rearing issues may enable communities to overcome barriers to improvements in child rearing that could not be achieved through traditional clinical, school, and social service agency initiatives. For example, a community intervention might help to overcome the barriers to effective parent training. A community organizing process such as the one described by Bracht and Kingsbury (1990) could persuade influential community members to allocate resources for low-cost, effective parent training programs. Such advocacy could bring skills and resources to bear on the problem of providing effective parenting programs. For example, it would be possible to mobilize civic, business, and governmental organizations. These organizations could help to reach parents and to motivate them to participate in programs. And they could help to ameliorate some of the social conditions that make parents unable to benefit from parenting skills training. Advocacy of parenting skills training could also induce schools to play a greater role in providing such training. Teachers can identify children who are at risk for behavior problems and who are likely to benefit from their parents receiving skills training (Bullis & Walker, 1993). Experimental evaluation of the efficacy of such an intervention is appropriate.

If community leaders can be convinced that programs for parents and schools have value, financial and social support for those programs will increase. Leaders will be more likely to support the expenditure of public monies for providing such programs and, as our experience has shown, will be more willing to put their own resources into such efforts.

Social capital. Coleman (1988) has suggested the concept of social capital to characterize the degree to which a social unit has the interlocking social behavior needed to accomplish a given outcome. The concept is consistent with Glenn's (1988) metacontingency analysis of the way in which interlocking behavior achieves outcomes. An example relevant to child rearing is the extent of social connections among families and the degree to which families share norms or informal rules supporting appropriate child-rearing practices (Coleman, 1988). Social connections make social, material, and informational support more likely. Sampson (1992) has reviewed evidence that shared norms make community support for a practice more likely. Poverty, residential mobility, single parenting, and family break-up affect child-rearing outcomes through their impact on the degree of social organization in the community. Even in the context of poverty, communities with greater social connections among residents have less child abuse (Garbarino & Sherman, 1980), lower crime rates, and better child-rearing practices and outcomes (Furstenberg, 1990). Thus, it may be possible to ameliorate some of the effects of poverty (as well as family break-up and mobility), through efforts to increase community members' social connectedness. Research is needed on how communities can increase these forms of social connectedness and the impact of such social connectedness on child-rearing outcomes.

Media Influences

Despite growing evidence of the effectiveness of mass media in influencing behavior, we have found no studies evaluating their efficacy in directly influencing child-rearing practices in communities. Evidence of the efficacy of mass media in promoting beneficial behavior comes from studies of health behavior (Farquhar, 1991; Flay, 1987a, 1987b; Flynn et al., 1992), crime prevention (O'Keefe & Reid, 1990), alcohol consumption (Barber, Bradshaw, & Walsh, 1989), and drunk driving (Niensted, 1990). There is also ample evidence that media influence behavior in nonbeneficial ways (e.g., Rosenthal, 1990; Surette, 1990). Thus, there is compelling reason to explore the potential of media to affect the prevalence of effective child-rearing practices.

Flay and Burton (1990) have defined a media campaign as an integrated series of communications through multiple channels. Flay's (1987b) review of the effects of media campaigns to affect smoking concluded that they had effects only when they had a high frequency of messages, were long-lasting, and reached a large proportion of the target audience; brief one-shot efforts were unlikely to have much effect.

Carefully developed and extensive media campaigns could accomplish a number of things relevant to improving child rearing in communities. They could (a) highlight parents, civic leaders, and school staff members who are knowledgeable in prevention strategies for behavior and academic problems; (b) influence community leaders and school personnel to support and promote parent training, parent support programs, and other community efforts conducive to effective child rearing; (c) influence parents to adopt more effective parenting practices; and (d) promote parent participation in parent training. The messages to be included in such campaigns must cover (a) the most important behavior to establish, (b) the most important behavior to prevent, (c) the nature and value of key parenting skills, and (d) the value of parent training and family support programs.

THE NEED FOR NEW RESEARCH STRATEGIES

A critical obstacle to the development of research on community interventions is the cost of such research. At least two things could be done to reduce the cost of research and increase its scientific yield.

Focus on Small Communities

Our large cities appear to have the most significant problems in raising young people, and the bulk of the population is found in large communities. This encourages research in large communities. Yet research in smaller communities will be far less costly. Community intervention research must compete with many other social and scientific priorities, and its scale makes it expensive. Before attempting to garner funds to evaluate costly interventions in large communities, preliminary tests of their value should be conducted in small communities.

For example, we are conducting an experimental evaluation of a community intervention to prevent tobacco and other substance use (Biglan & Ary, 1989). Sixteen communities are participating, eight of which receive a school-based program alone and eight of which receive the school-based program plus a community intervention. The communities range in size from 1,700 to 13,500. By working with such small communities, we can include enough towns to conduct a randomized control trial of the intervention with a sample size large enough to assure statistical power.

Single-Case Experimental Designs

Even with small communities, the randomized control trial is a costly way to develop and evaluate community interventions. Single-case or time-series experimental designs (Barlow, Hayes, & Nelson, 1984) provide a valuable alternative to randomized control trials. Such designs have been used extensively in clinical research (Barlow et al., 1984), in education (e.g., Cook & Campbell, 1979; Kratochwill, 1977), and are viewed as an

integral part of the entire field of behavior analysis (e.g., Sidman, 1960). They have been little used, thus far, in community intervention research.

Randomized control trials provide a test of the replicability of an intervention across a sample of cases. As such, they are most appropriate when there is an apparently powerful intervention whose efficacy needs to be evaluated (Flay, 1986). It is questionable, however, whether the field of community psychology has identified such interventions. Some have argued that such replicability is, in principle, not achievable (e.g., Gergen, 1986; Sarbin, 1986).

Single-case experimentation is more appropriate when we are trying to develop interventions. It forces us to focus squarely on the behavioral process of interest and requires that we identify independent variables with a large enough effect to be evident in the time-series data of only one or a few cases. Because of this, such a strategy may yield more powerful interventions. One cannot settle for a statistically significant though clinically insignificant effect—an outcome that is common when one employs randomized trials.

Two multiple baseline designs that we recently conducted illustrate the potential of single-case designs in community intervention research. One involved the evaluation of a community intervention to reduce sales of tobacco to young people (Biglan et al., in press). Four communities participated. In the first pair, the proportion of all community stores willing to sell tobacco was assessed every 3 weeks by two teenagers (age 15, 16, or 17). Following three baseline assessments, the intervention was introduced in the first community. Intervention consisted of a proclamation against sales to young people signed by numerous community leaders, education of store owners and clerks, and rewards and publicity for clerks who refused to sell to young people. Following two additional assessments, the intervention was introduced in the second community. The intervention produced substantial reductions in the proportion of stores willing to sell. The effect was replicated in two more communities using the same design.

The second example of this strategy involved an experimental evaluation of the effects of antitobacco media on parents and young people in four experimental and two control communities (Biglan et al., 1993). Panels of parents and young people (in Grades 6 and 8) were recruited in each community. They were selected to be representative of the parents and youth in that community and that grade level. The effects of two interventions—a youth antitobacco campaign and a campaign to encourage family communications about tobacco—were evaluated. Families were called every 6 weeks and were interviewed concerning their exposure to information about tobacco, their attitudes toward tobacco use, and their discussions about tobacco use. In two of the experimental communities, the interventions were introduced following one baseline assessment. In the other two experimental communities, the media campaigns were introduced following three baseline assessments. The impact of the campaigns was assessed by comparing baseline and postintervention assessments and by comparing experimental and control communities. The results indicated that the campaigns (a) exposed significantly more families to antitobacco messages, (b) increased parent–child discussions about tobacco use, and (c) induced more negative attitudes toward tobacco use among parents and young people. Effects on tobacco use by youths remain to be evaluated.

Although funding for time-series experiments remains difficult to obtain, this difficulty seems due more to behavioral scientists' unfamiliarity with the experiments than to problems with their scientific yield. As examples of their value for evaluating community interventions accumulate, a greater share of resources may be allocated to them.

CONCLUSION

We know enough about the factors that contribute to the success of children to begin to focus on how the prevalence of

successful children can be increased. Parent, peer, and school influences on child and adolescent behavior have been delineated, and interventions to optimize parent, peer, and school influences show great promise.

Research on community interventions to affect child rearing is a logical next step. Such research would investigate how previously validated interventions that focused on parenting skills, family support, peer influences, and academic and social behavior in schools can be implemented in entire communities. It would examine how the social systems of communities can be organized to enhance community support for effective programs that contribute to the success of children. It would examine whether mass media can be used to enhance the effects of such interventions and whether they can directly affect parent, peer, and teacher behavior. Ultimately, the effects of community interventions that combine these elements would need to be examined.

The dependent variable in this work would not be the behavior of individuals. It would be the incidence or prevalence of specific behaviors. For children and adolescents, the dependent variable would be the proportion of young people who engage in specific positive or problematic behavior. For parents, teachers, and community leaders, the dependent variable would be the proportion of people in these groups who engage in behavior known to foster good outcomes for children. Progress in this line of research requires the development of experimental methods that are more efficient than randomized control trials. Interrupted time-series designs, which have been developed largely by behavior analysts, show great promise.

As behavior analysts develop clinical research, they have a choice. They can focus their energies solely on developing effective ways of treating the problems of human behavior through traditional clinical means. Or, they can embrace the more ambitious goal of reducing the incidence and prevalence of human problems. Adoption of the latter goal does not preclude research on clinical interventions, but it would invite testing of many other interventions that may affect the incidence and prevalence of problems. Research on community interventions to increase successful child rearing is one way in which behavior analysts might pursue this goal.

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