Administration and Policy in Mental Health and Mental Health Services Research (© 2006)
DOI: 10.1007/s10488-006-0031-9

School-Based Mental Health Services for Children Living in High Poverty Urban Communities

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Studied the effectiveness of a school-based mental health service model, PALS (Positive Attitudes toward Learning in School), focused on increasing initial and ongoing access to services, and promoting improved classroom and home behavior for children referred for Disruptive Behavior Disorder (DBD) from three high poverty urban elementary schools. Classrooms were randomly assigned to PALS or referral to a neighborhood mental health clinic, with children identified by teacher referral and follow-up parent andeher ratings. Results indicated significant service engagement and retention for PALS ($n = 60$) versus families referred to clinic ($n = 30$), with over 80% of PALS families retained in services for 12 months. PALS services were correlated with positive changes in children's behavior as rated by parents, and with improvements in children's academic performance as rated by teachers. Implications for the design and delivery of mental health services for children and families living in high-poverty urban communities are discussed.

KEY WORDS: children; schools; poverty; urban communities; disruptive behavior disorder.

SCHOOL-BASED MENTAL HEALTH SERVICES FOR CHILDREN LIVING IN HIGH POVERTY URBAN COMMUNITIES

Families living in poverty face extraordinary pressures with diminishing community resources. Recent U.S. census data indicated a rise in children's poverty for the third consecutive year, with 17.6% of children estimated to be living in poverty, and 11.4% of children without health care (DeNavas-Walt, Proctor, & Mills, 2004). For much of the U.S., children's poverty is concentrated in urban communities (Douglas-Hall & Koball, 2004), where exposure to community violence affects as many as 80% of children (U.S. Department of Justice, 2003), impacting children's academic performance, and resulting in high rates of depression, and disruptive behavior (Schwartz & Gorman, 2003). Children's disruptive behavior in high-poverty communities is also related to family difficulties, frequent housing moves, and lack of after-school and other recreational activities (Halpern, 1999; Hoglund & Leadbeater, 2004; Snyder & Sickmund, 1999). Not surprisingly, prevalence rates for children's disruptive behavior in urban communities are almost three

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times national estimates (Tolan & Henry, 1996), and is predictive of ongoing school difficulty and delinquency (Bennett, Brown, Boyle, Racine, & Offord, 2003; Farrington & Loeber, 1999; Guerra, Huesmann, Tolan, Van Acker, & Eron, 1995).

Despite these considerable stressors, supportive family and school characteristics have been shown to be associated with positive outcomes for children living in poverty (Gorman-Smith & Tolan, 2003; Masten, 2001; O'Donnell, Schwab-Stone, & Muyeed, 2002). However, these resilient features of families and schools are rarely targeted for mental health programs, which, in high-poverty communities, are plagued by fragmentation and lack of coordination, resulting in a system that neither allocates resources successfully nor attends to the quality of services provided (Knitzer, 2000). As described in the historic Surgeon General's report on mental health (U.S. Public Health Service, 2000), and as first noted by Weisz and colleagues (Weisz, Weiss, & Donenberg, 1992), there is a critical gap between university-based clinical trials and community-based mental health practice. An improved understanding of factors associated with the effective transport of evidence-based practices to community settings is a high priority for future research and policy (Goldman & Azrin, 2003; Hoagwood, Burns, & Weisz, 2002; National Advisory Mental Health Council Workgroup on Child and Adolescent Mental Health Intervention Development and Deployment, 2001; New Freedom Commission on Mental Health, 2003; Ringeisen & Hoagwood, 2002).

Service Utilization

A recent analysis of three national databases indicated that nearly 80% of low income youths in need of mental health services did not receive services within the preceding 12 months, with rates approaching 90% for uninsured families (Kataoka, Zhang, & Wells, 2002). Even those families who receive mental health services experience attrition rates of greater than 50%, with low-income, minority children at especially high risk (Kazdin, 1996; Kazdin, Holland, & Crowley, 1997; Yeh, McCabe, Hough, DuPuis, & Hazen, 2003). A primary goal of the present study was to compare service utilization and service outcomes for families referred to clinic-based services to a mental health service program restructured to overcome the obstacles and accommodate the unique needs of urban families living in highly impoverished communities.

Several practical barriers have been identified to explain the low rates of mental health services utilization among urban, poor families. Among them are stigma, lack of information, inaccessible location of services and difficulties with transportation, complexities of the mental health service delivery and reimbursement systems, unresponsive providers, and competing reliance on alternative methods of help (Flisher et al., 1997; Kazdin et al., 1997; McKay, Stoewe, McCadam, & Gonzales, 1998). Not surprisingly, indicators of economic disadvantage, such as being on public assistance and not being covered by health insurance, also have been associated with unmet needs (Flisher et al., 1997). In addition, McMiller and Weisz (1996) found that African-American and Latino families were less likely to seek help from a professional as compared to Caucasian families.

In addition to practical barriers, studies that compare and contrast families who do and do not receive services have revealed that child and parent attitudes toward services also explained some of the unmet need. For example, Owens et al. (2002) found that parents' beliefs that a child will improve without professional intervention were associated with lower entry into services. Similarly, Flisher et al. (1997) found that parent expectations that their child would refuse to participate in mental health services predicted children not receiving services. In a comprehensive look at multiple barriers, Zahner and Daskalakis (1997) found that demographic variables, parental attitudes, and children's illness profiles all significantly influenced service use in school-aged children. Yeh et al. (2003) found that parent report of children's total problem scores and parental endorsement of depressive symptomatology were positively correlated with the number of barriers to mental health services endorsed by parents.

Given the documented disparity between mental health needs and mental health service use, several investigators have studied strategies for overcoming barriers at the point of service entry, usually focused on the initial contact between agency and clients. For example, Russell, Lang, and Brett (1987), Shivack and Sullivan (1989), Szapocznik et al. (1988), and McKay et al. (1998) all have reported success with telephone engagement interventions in which providers offer detailed information about the agency

and the services, and problem-solve with clients around practical concerns such as work schedules, childcare responsibilities, or transportation. While promising with respect to *engaging* families in treatment initially, these approaches have not been consistently effective at *retaining* families in services. Rather, more profound changes in the structure of the services themselves may be required in order to ensure ongoing access for children who need services (Horwitz & Hoagwood, 2002).

One strategy to enhance the relevance of services to those they are intended to help is through use of a ''collaborative model'' in which community members work with clinicians to design and implement educational and mental health services that are acceptable to consumers (Friesen & Koroloff, 1990; Grant, Ernst, & Streissguth, 1999). Community members who share certain demographic characteristics or who have succeeded in similarly challenging circumstances with the target population may be more likely to influence behavior change due to their shared experiences, opportunities for natural empathy, and reduced social distance (Hiatt, Sampson, & Baird, 1997). Compared to a model in which community members are trained to follow an existing protocol, a collaborative model invites community members to provide information that would not otherwise be available to mental health staff, including knowledge of neighborhood strengths and needs, familiarity with local resources, and advice regarding which program elements might be acceptable to and utilized by members of their communities (McCormick et al., 2000). In the present study, community members were integrally involved in the recruitment of families and the design and delivery of services, consistent with a collaborative service model. To our knowledge, this was the first application of a collaborative service model in a school-based mental health service, and the first to target children with disruptive behavior.

School-Based Mental Health Services

The experimental mental health service in the present study focused on children's behavioral and academic functioning at home and school. In recent years, a growing school-based mental health movement has emerged, largely to overcome barriers to children's services (Flaherty, Weist, & Warner, 1996; Weist, 1997). For example, a survey of school-based health clinics in 1998–1999 indicated that 57% offered mental health services as compared to just 30% 7 years earlier (Brindis et al., 2003). In fact, schools are commonly regarded as the *de facto* providers of mental health services for children and youth (Burns, Schoenwald, Burchard, Faw, & Santos, 1995; Farmer, Burns, Phillips, Angold, & Costello, 2003), providing an estimated 70–80% of psychosocial services to those children who receive them (Rones & Hoagwood, 2000). However, little is known about the quality or type of services offered in school-based programs, in part because few school-based mental health programs have been evaluated empirically (Rones & Hoagwood, 2000).

Individual counseling is a widely used therapeutic modality in most school-based mental health programs, in part due to the easy access to children (Armbruster & Lichtman, 1999; Brindis et al., 2003; Catron, Harris, & Weiss, 1998; Flaherty et al., 1996; Friedrich, 1999). However, for children evidencing disruptive behavior disorders, the focus of the current study, there is no evidence that counseling is an effective intervention, and some evidence that it can exacerbate problems (DuPaul & Eckert, 1997; Farmer et al., 2003; Hunter, 2003; Ringeisen, Henderson, & Hoagwood, 2003; Wilson, Lipsey, & Derzon, 2003). Alternatively, school-based programs focused on consultation with teachers and parents can be effective approaches to enhancing children's mental health (Lowie, Lever, Ambrose, Tager, & Hill, 2003; McKay, Atkins, Hawkins, Brown, & Lynn, 2003; Weiss, Harris, Catron, & Han, 2003) but are, as yet, less commonly applied (Adelman & Taylor, 2003; Atkins, Frazier, Adil, & Talbott, 2003; Hunter, 2003; Ringeisen et al., 2003). Consultation with teachers can maximize opportunities to effect children's academic learning and classroom behavior (Fantuzzo & Atkins, 1992; Ringeisen et al., 2003). Increased parental involvement in children's schooling is associated with improvements in reading (e.g. Henderson & Berla, 1994), and improved behavior at home and school (Gorman-Smith, Tolan, Henry, & Florsheim, 2000). As yet, however, a school-based mental health program focused on consultation to parents and teachers has not been studied in high-poverty urban schools.

Therefore, the present study investigated a school-based, mental health service sustainable through Medicaid fee-for-service funding, designed to meet the unique needs and capacities of urban

families living in high-poverty communities, and focused on reducing children's disruptive behavior and improving learning. Services were guided by a behavioral-ecological model that proposed that positive classroom environments and family linkages to schools would mitigate the negative effects of poverty on children's adjustment to school (Masten & Curtis, 2000). Specifically, improved children's behavior and learning was hypothesized to relate to enhanced academic support and to teacher's use of appropriate classroom behavior management strategies, as well as increased parent involvement in their child's education, and improved parenting strategies. The goal of the current study was to examine this model relative to clinic-based services-as-usual on initial and ongoing engagement in services, and effectiveness on measures of school and home adjustment.

METHOD

The study was implemented in Kindergarten through 4th grades of three public schools located in high-poverty communities in a large Midwestern city, in which 97% of students were from minority families receiving free or reduced lunches. The research design was a nested model, in which classrooms within schools were randomly assigned to either the experimental school-based intervention or referral to clinic. Information was collected at the beginning and end of each school year from parents and teachers regarding children's home and school functioning. However, at the end of the first year of the study, a federal IRB investigation suspended all research activity at this university for several months, hampering subject recruitment for the latter 2 years of the study.[1] Therefore, we will provide information on two overlapping cohorts; Cohort 1 enrolled at the initiation of the study, and Cohort 2 enrolled at the resumption of research activities approximately 1 year later.

For each cohort, participating children met DSM-IV diagnostic criteria for one or more disruptive behavior disorder (DBD) based on the DBD Rating Scale (Pelham, Gnagy, Greenslade, & Milich, 1992). The scale lists DSM-IV criteria for Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), and Conduct Disorder (CD) adjacent to columns headed *Not at all, Just a little, Pretty much*, and *Very much*. Following recommendations by Pelham et al. (1992), endorsement of *Very much* indicated symptom presence. Parent reports were solicited through structured interviews due to the potential for lack of understanding or difficulty reading. Parents and teachers were paid $10 an hour for completion of research measures, which were collected at intake, 2 months into each school year, and one month before completion of the school year.

Participant Recruitment

Cohort 1

Classrooms were randomly assigned to the experimental school-based intervention (n = 9) or referral to clinic (n = 8). Informed parental consent was obtained from 279 of 325 parents (85.8%) for teachers to complete the IOWA-Conners Teacher Rating Scale (described below) on students in their classrooms. Of the 279 students, 147 (52.7%; N = 83

[1]The university-wide IRB investigation began early in the second year of the grant, which coincided with the beginning of a new school year. The investigation was precipitated by concerns that the university's IRB was not appropriately reviewing research proposals. The investigation noted discrepancies in procedures and personnel that resulted in a 3-day suspension of the university's Multiple Project Assurance and a subsequent suspension of all research at the university until a new IRB was established and this board had completed a re-review of all research protocols. Our project obtained a waiver allowing us to continue services to our enrolled families and teachers throughout the investigation, but new enrollments were not allowed until our study was reviewed by the re-constituted IRB several months later. When we received approval in late February, the schools themselves were preparing for statewide testing in March and April, which required that we postpone recruitment until the following September. Since this was the third and final year of the grant, the budget had been intended for follow-up assessments only. Thus, we had only enough funds to support services to two schools, rather than the six we had planned. This necessitated a very difficult discontinuation of services in one of the schools already participating, which reduced the sample of classrooms from 17 to 12 in the third year of the study. In addition, although principals had agreed to maintain the integrity of the PALS and clinic cohorts for Year 2 by retaining children within these groups when promoted to the next grade, following the university research shut-down, principals were no longer able or willing to follow that plan. Because our research design was a nested model, in which each school contained both PALS and control classrooms, this reorganization further disrupted our sample and resulted in a control group that was too small to study in the third and final year of the study.

from intervention classrooms, $N = 64$ from clinic classrooms) obtained scores above the clinical cut-off based on national norms of one standard deviation above the mean (Pelham, Milich, Murphy, & Murphy, 1990). The mean number of students identified was 9.44 for school-based intervention classrooms and 6.75 for referral to clinic classrooms. Extensive procedures to enroll families in the study were led by parent advocates who contacted families by phone or home visit to describe the nature of the research and invite their participation. Families who expressed interest were contacted to complete informed consent procedures and pre-test questionnaires. Contact rates were 90.4% for intervention families ($n = 75$) and 85.9% for clinic families ($n = 55$). School class sizes ranged from 20 to 25 students. Participating teachers ($n = 16$) were 84% female ($n = 13$), 75% African-American ($n = 12$), and 68% with more than 10 years teaching experience ($n = 10$).

Cohort 2

A reconstituted IRB requested revised recruitment guidelines to enhance confidentiality of teacher screening information. Teachers completed a brief behavior screening form delivered to the school's mental health team, containing items related to classroom disruptive behavior. The team passed appropriate referrals to project staff who made the initial contact with families via phone, home visit, or school visit to obtain written informed consent and complete a pre-test packet of questionnaires. Children who remained in the two retained schools were approached to re-enroll in the study ($n = 24$), with additional children from these schools identified and invited to participate ($n = 28$), resulting in a sample of children ($n = 52$) approximately equally distributed between the two schools ($n = 29$, $n = 23$). All children were African American with 71% ($n = 37$, 16 girls, 21 boys) from 8 intervention classrooms, and 29% ($n = 15$, 7 girls, 8 boys) from 5 clinic-control classrooms. There were no significant between-group differences on sex of students $\chi^2(1, 52)=0.02$, or parent and teacher ratings of disruptive behavior (F's <1). Class sizes ranged from 15 to 28 students. Teachers' ($n = 13$) were 69% female ($n = 9$), 54% African American ($n = 7$), and 46% Caucasian ($n = 6$). Teaching experience ranged from 1 year or fewer ($n = 3$) to 18 years or more ($n = 5$).

Measures

IOWA-Conners Rating Scale

This 10-item rating scale is designed to assess children's disruptive behaviors (Milich & Landau, 1988). Parents and teachers indicate along a 4-point scale (*not at all, very little, pretty much, very much*) how well each statement reflects the child's behavior during the past month. The measure produces two five-item subscales, *Inattention-Overactivity (IO) and Oppositional-Defiant (OD)*. The scale has been normed on a sample of over 600 elementary age children (Pelham et al., 1990; Pelham, Milich, Murphy, & Murphy, 1989). The two subscales were found to be moderately correlated ($r = .62$) with high internal stability ($\alpha = .89$ and .92 for IO and OD scales, respectively). Loney and Milich (1982) reported test-retest reliability of $r = .86$ and $r = .89$ for the IO and OD subscales respectively. The combined scores from the IO and OD subscales were used to identify children at-risk for one or more Disruptive Behavior Disorder, and also as a dependent measure of parent and teacher report of disruptive home and school behavior.

Social Skills Rating System (SSRS)

Elementary Level (grades K-6) rating scale forms were administered to parents (55 items) and teachers (48 items) to assess children's adjustment (Gresham & Elliott, 1990). SSRS forms include a Problem Behavior scale (17 and 9 items on parent and teacher forms, respectively), a Social Skills scale (38 and 30 items, respectively), and, for teachers, an Academic Competence scale (9 items). Problem Behavior and Social Skills items are presented on a 3-point scale (0 = never, 1 = sometimes, 2 = very often). Academic Competence items are presented on a 5-point scale (1 = lowest 10%, 2 = next lowest 20%, 3 = middle 40%, 4 = next highest 20%, 5 = highest 10%). The scale was standardized on a heterogeneous population of 33% urban and 28% minority children. Internal consistency ranged from $\alpha = .65$ to .90 (parents), and $\alpha = .78$ to .94 (teacher). Test–retest reliability (4-week) ranged from $r = .65$ to .87 (parent), and $r = .84$ to .93 (teacher). Dependent measures were parent and teacher report of problem behavior and social skills and teacher report of academic competence.

Clinical Service Units

Dosage of clinical service was based on progress notes of type, setting, duration, and participants for each clinical contact. Two service variables were created: family service units and school service units. A family service unit was computed by summing billed contacts between the clinician and family member (typically the target child or guardian) multiplied by the total duration (in minutes). Activities included were evaluation, crisis intervention, consultation, case management, family therapy, parent or child groups, individual therapy, and medication management. A school service unit was computed by summing billed contacts between the clinician and child that occurred in the school, or between the clinician and teacher on behalf of the child, multiplied by the total duration (in minutes). School service units were summed across students in a classroom to create a classroom service unit variable to reflect the emphasis on class-wide interventions.

PROCEDURE

Clinic-Based Services

Clinic services were provided by a university mental health clinic serving predominantly Medicaid-eligible families, and located within walking distance of the referring schools. Families assigned to receive services in the clinic were contacted by project staff to solicit their interest in obtaining mental health services for their child. When families indicated an interest in receiving services for their child, project staff completed an intake form and an appointment was made for that family within one-week of the time of the intake. These arrangements were made to facilitate families' receipt of clinic-based services by avoiding the need for families to contact the clinic on their own and were in addition to standard practices used by the clinic staff such as letters sent out confirming the appointment, and phone call reminders. It was also standard practice for this clinic to follow-up no-show appointments with a letter and phone call to arrange another appointment. Although we did not keep records as to whether these procedures were followed, once the initial appointment was made, these families were processed as any other family and therefore we can assume that such procedures were followed to the same extent as with other families attempting to receive services at this clinic. There were no restrictions placed by the study on the type, frequency, or timing of services provided families in order for these services to approximate treatment-as-usual.

School-Based Service Delivery

Classroom-Based Service

The PALS staff was trained on a variety of contingency-based classroom behavior management programs, which were summarized in a treatment manual provided to each staff member. Class-wide programs (Barrish, Saunders, & Wolf, 1969; Kelley, 1990) were especially encouraged to improve the overall functioning of the classroom, to avoid stigmatizing individual children enrolled in the program, and to enhance parental involvement and input (Heller & Fantuzzo, 1993). Additional recommendations to improve classroom organization included posting rules, using clear and consistent presentation of in-class assignments and homework, and using praise and reward for appropriate behaviors more frequently than criticism or punishment for inappropriate behaviors (Paine, Radicchi, Rosellini, Deutchman, & Darch, 1993). Individualized reward programs were recommended for high-need students, if class-wide programs were not sufficient to reduce disruptive behaviors (Walker, Colvin, & Ramsey, 1995). Figure 1 illustrates the

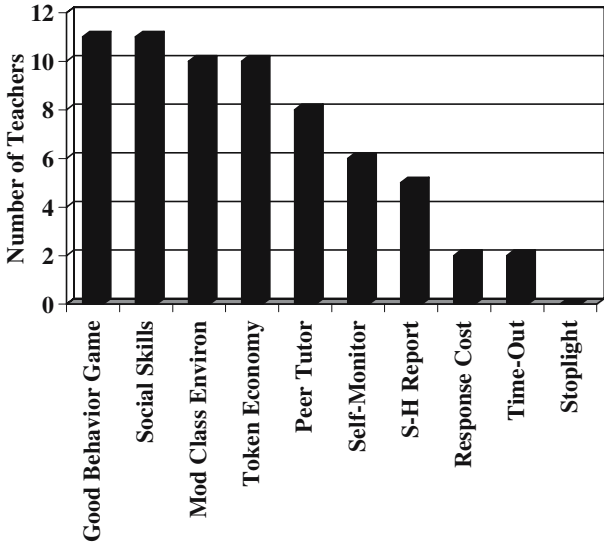

Fig. 1. Teacher's use of recommended classroom strategies.

distribution of teachers' use of classroom strategies in the first 2 years of the study based on clinicians' progress notes.

In Year 3 of the study (Cohort 2), PALS clinicians received enhanced training on peer assisted learning programs (DuPaul, Ervin, Hook, & McGoey, 1998), in which student pairs, matched on ability level, engaged in reading exercises designed to improve oral reading, pronunciation, and comprehension (Fuchs, Fuchs, Mathes, & Simmons, 1997). This was intended to address concerns by staff and parents that a majority of PALS students were reading below-grade level or not able to read at all. Clinicians were also trained to conduct curriculum-based assessments (Shapiro, 1996) to determine students' instructional levels, to assist teachers to identify appropriate student pairs and tutoring goals, and to track the progress of the intervention.

Family-Directed Service

All PALS families received family services by home visit or by attendance at twice-monthly parent groups held alternately at the school and clinic offices, co-facilitated by a clinician and parent advocate. The range of topics included helping with homework, communicating with teachers, establishing routines (e.g., for morning, homework, chores, bedtime), encouraging positive behaviors at home, implementing reward systems, using techniques for relaxation, and linking with other social service agencies to obtain services beyond the scope of the PALS program (e.g., assistance with food and shelter, medical problems, need for after-school programs, summer camps, remedial academic programs). Family services consisted of focused discussion of parenting (McMahon & Forehand, 2003), while also enhancing social support by encouraging parents to bring friends to the groups. Transportation, meals, and childcare were also provided. Families who did not attend group meetings received the same information through home visits, contacts by phone or at school, and informal meetings with parent advocates. The goal was to maintain contact with every family at minimum on a bi-weekly basis. Figure 2 illustrates the multiple opportunities for contact with families and rates of service use in the first 2 years of the project, derived from clinicians' progress notes.

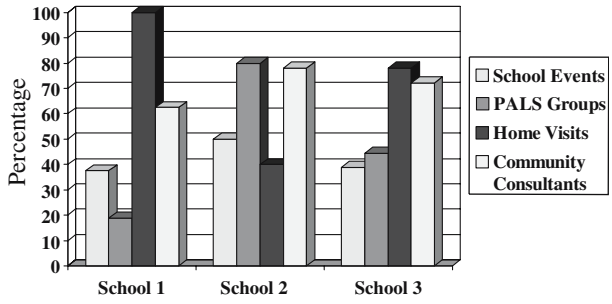

Fig. 2. Percentage of families utilizing parent-directed services across schools.

Monitoring Services

Staff training and supervision were conducted throughout the year. At the inception of each school year, PALS clinicians and parent advocates participated in a 2-day training led by the first-author that introduced the treatment manual containing information about the schools and communities, the service delivery model, and data collection procedures. This training was supplemented by topic-based in-service training throughout the year, and weekly group and individual supervision. Parent advocates met weekly with project supervisors to receive additional support and information, as necessary. Clinicians completed progress notes after each clinical contact, including a brief description of their clinical activity, comment on their client's academic and behavioral progress, and plans for further service. These notes were reviewed and signed by the clinician's supervisor every week. During the final year of the study, monthly goal forms were collected on a subset of participating children. These forms were developed by the research team to customize services to the specific and unique needs of each child, and to track teacher and parent perceptions of children's progress toward their individualized goals.

RESULTS

Engagement

Initial Engagement

Cohort 1 was followed longitudinally for 12 months to compare rates of clinical service engagement between families randomly assigned to

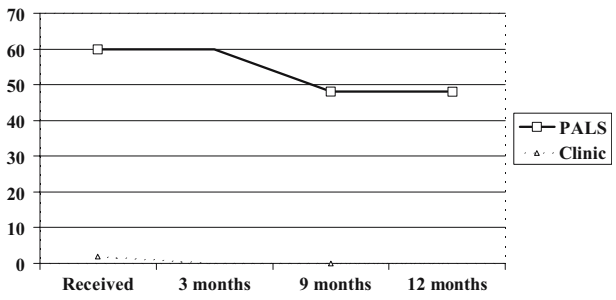

Fig. 3. Initial and ongoing service use for PALS versus clinic services.

receive services by PALS staff and those referred for clinic-based services. Regarding initial enrollment, 60 of 75 families (80%) agreed to enroll in PALS classrooms, as compared to 30 of 55 families (54.5%) who agreed to enroll in clinic-based services $\chi^2(1, N = 130) = 9.65, p < .002$. There were no significant between group differences on children's sex (PALS: 25 girls, 35 boys; Control: 17 girls, 13 boys; $\chi^2(1, 90) = 1.61$), race (PALS: 58 African American, 2 Latino; Control: 29 African American, 1 Latino; $\chi^2(1, 90)=0.02$), or on parent and teacher ratings of disruptive behavior (F's < 1, df = 88, $p > .20$).

Ongoing Engagement

As illustrated in Figure 3, which present service use over time, all 60 families enrolled in PALS received services, as compared to only 2 of 34 (5.7%) of families referred to clinic. At 3-months, 100% of PALS families remained enrolled in services compared to 0% of families assigned to receive clinic-based services. In fact, for the entire 12 months, only two families received any services in the clinic, and both were for medication management with no follow-up. At 9 months and 12 months, 80% (48 of 60) of PALS families still remained in services. Follow-up assessment indicated that the 12 families who did not re-enroll in PALS services had transferred their children to other schools.

Re-Enrollment

Following the university shutdown and our subsequent withdrawal from one of the three schools, families and teachers at the remaining two schools were invited to re-enroll in services for the third and final year of the study. Of the Cohort 1 participants eligible for re-enrollment, 100% of PALS teachers ($n = 14$) consented to continue involvement in the study, whereas in classrooms in which identified families were referred for clinic services, only 50% of teachers ($n = 6$) agreed to continue involvement ($\chi^2(1, N = 20) = 8.24, p < .004$). Of the Cohort 1 PALS families from these schools ($n = 33$), three had moved away, four had been transferred to other schools, and two were assigned to clinic classrooms. Of the remaining Cohort 1 PALS children ($n = 24$), 83% ($n = 20$) agreed to re-enroll in PALS services. Of the Cohort 1 families assigned to receive clinic-based services in these two schools ($n = 17$), two had been transferred to other schools, four were assigned to PALS classrooms. Of those remaining ($n = 11$), 36% ($n = 4$), agreed to re-enroll in clinic-based services, a significantly lower number as compared to PALS families $\chi^2(1, N = 39) = 9.50, p < .002$. At 3 months follow-up, 100% of PALS families ($n = 20$) were receiving services compared to 0% of families referred to clinic ($n = 4$). In fact, none of the four families who agreed to re-enroll in clinic services received any services.

Effectiveness

Cohort 1

PALS school service units were correlated significantly and negatively with parent IOWA-Conners total scores ($r = -.54, p < .001$), controlling for pretest scores, indicating improved behavior, but not with teacher IOWA-Conners total scores ($r = -.12, p > .20$), nor with teacher SSRS Academic Competence scores ($r = .23, p > .10$). PALS family service units also were correlated significantly with parent IOWA-Conners total scores ($r = -.36, p < .03$), but not with teacher IOWA-Conners total scores ($r = .21, p > .10$), nor with SSRS Academic Competence scores ($r = -.23, p > .10$). When PALS school service units and family service units were entered as simultaneous predictors of parent-reported IOWA-Conners scores in a multivariate regression analysis, controlling for pretest scores, school service units remained a significant predictor ($r = -.46, t = -2.7, p < .02$), whereas family service units did not ($r = -.19, t = -1.1, p > .20$).

Cohort 2

PALS school service units were correlated significantly with parent IOWA-Conners total scores

($r = -.32$, $p < .04$), controlling for pretest scores, indicating reduced disruptive behavior, and were significantly and positively correlated with teacher SSRS Academic Competence scores ($r = .37$, $p < .05$), controlling for pretest scores, indicating improved academic performance. However, PALS school service units were also significantly and positively correlated with teacher IOWA-Conners total scores ($r = .39$, $p < .04$), controlling for pretest scores, indicating worsening behavior. PALS family service units were not correlated significantly with disruptive behavior as rated by parents or teachers ($r = .06$, and $r = .12$, respectively, $p > .20$), or with academic competence as rated by teachers ($r = -.10$, $p > .20$).

DISCUSSION

This study examined the effectiveness of a mental health service model focused on increasing initial and ongoing access to services, and improving children's behavior at home and school, in high-poverty urban communities. The experimental service model, PALS, operated within a fee-for-service Medicaid environment consistent with most community mental health programs. In regard to initial and ongoing involvement in services, the results were strong and compelling. Parents who were randomly assigned to receive services by PALS staff, were significantly more likely to enroll their child in services as compared to those who were assigned to receive clinic-based services, and PALS services were maintained across two school years for 80% of families. In contrast, only two of 34 families who agreed to receive services in the clinic received any services across the 2 years, and each of the two children who received clinic services received one session of a medication evaluation with no follow-up.

As we noted previously, several studies have shown high initial show rates following use of a structured intake procedure for clinic-referred families in low-income communities (McKay et al., 1998; Santisteban et al., 1996; Szapocznik et al., 1988). We found a similar high rate of service use for families referred to PALS services, led by our parent advocates working in collaboration with our clinical staff. However, parent advocates also approached families regarding receiving services in the clinic and yet, for these families, initial show rates were alarmingly low. Although we do not know the specific reason for the lack of services in the clinic for these families, the significant difference between randomized families' initial choice to enroll in PALS (80%) versus clinic (55%) reinforced the fact that services in clinics were a relatively unpopular choice for families in these communities, and were unlikely to reach the majority of children and families in need of services (Kataoka et al., 2002; Knitzer, 1996). Furthermore, the high percentage of families who chose to enroll their child in PALS services suggested that the reluctance of families to bring their child to the clinic related more to the setting and nature of services than to their motivation to seek help for their child (Bell & McKay, 2004; Ringeisen & Hoagwood, 2002). We are aware of no studies in urban, high-poverty communities that have reported ongoing show rates that match the rates for PALS services. The high rate of re-enrollment of families and teachers in PALS services in our last year of the study, though based on a relatively small sample, provided another indication that these services were valued by parents and teachers.

One way that PALS differed from traditional clinical service models was the concurrent use of school-based and home-based services, allowing for continuity of services when either teachers or parents were unavailable to staff. In addition, PALS services involved the active involvement of parent advocates as key informants and links to families. Parent advocates were instrumental in overcoming the multiple barriers to mental health service use that often prevents impoverished minority families from accessing services for their children. For example, parent advocates assisted in locating families who were without phones, facilitated staff interactions with families, and assisted in the design and delivery of parent-directed services. Involvement of paraprofessionals is not uncommon in children's mental health services, most typically for children with intensive mental health needs (e.g., Hiatt et al., 1997; Koroloff, Elliott, Koren, & Friesen, 1994; Nielsen, 1995). However, to our knowledge, the present study was unique in applying this strategy to children with disruptive behavior disorder, and in involving parent advocates in a central role in the design and delivery of parent services.

Although the high rates of initial and ongoing service use are encouraging, they are a necessary but insufficient justification for a service delivery model. It is also necessary that the services that are delivered are appropriate and effective. On this question our results were less clear, in part due to the

disruption of the study caused by the university-wide IRB investigation and temporary suspension of research. Tentative support for the model was indicated by the positive association between PALS services with improvement in children's academic performance as rated by teachers, and improvement in children's behavior as rated by parents. This is consistent with the considerable body of research that has shown that academically-oriented interventions are often associated with improved school behavior (DuPaul & Eckert, 1998; Kaplan & Maehr, 1999).

The positive association of PALS school services to teacher ratings of academic competence in the last year of the study coincided with a shift in focus towards tutoring and curriculum-based assessment by PALS staff. A direct focus of mental health services on children's academic performance is easily justified for children attending high-poverty, urban schools, with recent trends indicating a sharp decline in achievement for urban minority children (Stedman, 2003). In addition, academic success is an important hallmark of children's sense of competence (Masten & Curtis, 2000), and a critical component of their social and emotional adjustment (Roeser, Eccles, & Strobel, 1998). In fact, the benefits of academic interventions on children's social and emotional functioning often rival the benefits seen from psychosocial interventions (Coie & Krehbiel, 1984; DuPaul et al., 1998; Fantuzzo, King, & Heller, 1992), including equivalent positive effects on teacher and peer relations as compared to a school-based counseling program (Catron et al., 1998). Future research can explore models that address the wide range of predictors associated with positive academic performance, including effective instructional strategies, positive student–teacher relations, parental involvement, and classroom management (Hamre & Pianta, 2001; Stone & McKay, 2000; Stringfield, 1994).

However, these positive results should be viewed cautiously due to the correlational nature of the data, and the fact that we were unable to maintain a control group due to the disruption of research at the university. In addition, teacher ratings and parent ratings differed in regard to the prediction of children's behavior, and, in the last year of the study, school-based services were correlated with a worsening of classroom behavior by teacher report. On the one hand, parent and teacher report of children's behavior are often discrepant in school-based studies (Hinshaw & Nigg, 1999). Furthermore, it is conceivable that parents were better able to focus on the impact of the intervention on their child, as compared to teachers, as the considerable stress experienced by inner city teachers and the level of disruption in these classrooms and schools may have negatively biased teacher observations of individual students' behavior (Greene, Abidin, & Kmetz, 1997; Jussim, 1989; Stevens, Quittner, & Abikoff, 1998). Alternatively, it may be that the shift towards academic goals by PALS staff, however well justified, may have diluted the behavioral consultation offered to teachers.

Although Gorman-Smith (2003) found large, positive behavioral effects of teacher instruction and consultation in a heterogeneous group of urban and suburban schools, there is no evidence for such effects from PALS consultation with teachers, and, as noted, the correlation between PALS school services and end-of-year disruptive behavior suggests a possible iatrogenic effect of mental health consultation. Although one explanation for the mixed outcome results is that the recommended classroom strategies were ineffective for these high-poverty urban schools, a more plausible explanation might suggest that complex interventions such as classroom behavior management strategies may need to be monitored more closely in these highly stressful settings to ensure that strategies are being carried out as they were designed and intended.

Enhancing children's school experience through consultation to teachers is especially daunting in high-poverty urban schools, given the deteriorating conditions, the high levels of staff stress, and the enormous obstacles to daily living experienced by children and families (Atkins et al., 2003; Boyd & Shouse, 1997; Knitzer, Yoshikawa, Cauthen, & Aber, 2000). Despite our recognition of these factors, and the considerable effort exerted to support teachers' implementation of recommended classroom strategies, our monitoring of these services was relatively weak, and therefore teachers' use of strategies may have been highly variable. Schoenwald, Sheidow, and Letourneau (2004) have described procedures for tracking supervisor and therapist fidelity to the principles of Multisystemic Therapy (MST). Their study showed that supervisor and therapist high fidelity with MST principles was associated with positive youth outcomes. Moreover, supervisors rated as less knowledgeable about MST principles were associated with negative youth outcomes. Their data provide a powerful reminder that quality of supervision is more important than

quantity, and suggest an important next step for mental health services in disadvantaged schools.

In addition, Abikoff (2001) has suggested the expanded use of individualized measures such as goal attainment scaling in treatment outcome studies as an alternative or complement to standardized rating scales that assume similar behavioral goals across participants. Goal attainment scaling provides a way to measure individualized goals by standardizing the scaling across participants, thereby providing outcome measures that are appropriate to these goals. Our goal forms used for monitoring services were initial attempts to develop such measures. In fact, the goal forms, designed primarily for parents and teachers to identify target goals, led us to our decision to intervene directly on children's academic learning in the third year of the study. Expanded use of these procedures and the development of intensive and extensive fidelity monitoring procedures are promising additions for future research.

As Adelman and Taylor (2003) note, schools are in the business of learning and therefore are often unable or unwilling to distribute scarce resources towards programs to promote social and emotional development unless it directly impacts learning. We propose that these circumstances provide an ideal opportunity to reexamine the goals for mental health programs, especially in the high stress environment of urban schools in impoverished communities. Specifically, we suggest that in these high-poverty communities, the goal should not be to make mental health services a primary goal of schools, but rather to make children's schooling a primary goal for mental health services. Our data suggest that this shift in focus can reach parents more effectively than can services delivered in clinics, and can contribute towards enhancing children's academic performance and behavioral adjustment. Although much more work is needed to refine and improve these services, we believe this is a promising start towards a model of accessible, effective, and sustainable services in disadvantaged communities.

ACKNOWLEDGMENTS

This study was supported in part by National Institute of Mental Health Grant R01MH56491 and grants from the Grant Health Care Foundation, and the University of Illinois Great Cities Institute. We gratefully acknowledge the contributions of Barbara Baumann, Sarah Beehler, D'Andrea Bell, Jennifer Beyers, Darnetta Byndum, Marrion Gandy, Monica Garcia, Tamara Gathright, Derek Griffith, Tracy Hawkins, Linda Lambrecht, Bridgette Leachman, Richard Renfro, Roslyn Samson, Deborah Starks, Jennifer Treuting, Amanda Webster, and Paulette Wiley.

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