

Not Just a Walk in the Park: Efficacy to Effectiveness for After School Programs in Communities of Concentrated Urban Poverty

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Abstract This study examined a model for mental health consultation, training and support designed to enhance the benefits of publicly-funded recreational after-school programs in communities of concentrated urban poverty for children’s academic, social, and behavioral functioning. We assessed children’s mental health needs and examined the feasibility and impact of intervention on program quality and children’s psychosocial outcomes in three after-school sites ($n = 15$ staff, 89 children), compared to three demographically-matched sites that received no intervention ($n = 12$ staff, 38 children). Findings revealed high staff satisfaction and feasibility of intervention, and modest improvements in observed program quality and staff-reported children’s outcomes. Data are considered with a public health lens of mental health promotion for children in urban poverty.

Keywords Efficacy to effectiveness · Urban poverty · After school · Mental health promotion

Introduction

Nearly two decades ago Weisz et al. (1992) launched a new generation of mental health services research by drawing attention to “the research to practice gap,” the finding that community care settings were unlikely to utilize evidence-

based practices, despite significant efforts to encourage and support their adoption. A new literature emerged, encouraged by a highly influential National Institute of Mental Health (1999) task force report prioritizing practice-oriented research. Among the contributions of this new literature was to highlight the poor representation of low-income communities in clinical research samples (Shumway and Sentell 2004; Weisz et al. 2005), thus raising questions about the appropriateness of transporting evidence from university-based clinical trials to community practice settings (e.g., Hoagwood et al. 2002; Ringeisen et al. 2003). Consensus emerged that future studies would need to provide a different kind of “evidence” that more accurately reflects the complex realities of community service settings and the populations they serve (Hoagwood et al. 2002).

The present study examined a model for mental health consultation, training and support for after school program staff designed to enhance the mental health promoting benefits of program participation for children living in urban poverty. The project proceeded in two phases both of which emphasized consultation to staff rather than direct service to children. In phase one, we collaborated with park district after school program staff at one site in a high poverty community to adapt the efficacy-based, manualized Summer Treatment Program model (STP; Pelham et al. 1997) focused on facilitating positive peer socialization, reducing disruptive behaviors, increasing prosocial behaviors, and improving academic performance. The goal was to apply the principles and simplify the strategies of the STP to make them feasible, effective, and sustainable in this community setting (after school programs), with a more diverse population (100 % African American, low-income children), and indigenous service providers (park staff). Phase one has been described in detail (Frazier et al. 2012),

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and briefly, consisted of 1 year of planned and informal dialogue with staff, participant observation during program hours, experimentation with specific academic and behavioral interventions targeting activity engagement and instruction, and ongoing practice and implementation by park staff supported by feedback and problem-solving with the investigative team. The focus of this paper is on phase two, in which we examined the mental health needs in the after school setting and tested the intervention in three after-school sites, to study its feasibility and impact on program quality indicators and children's psychosocial outcomes, in comparison to three demographically-matched programs that received no intervention.

Mental Health Needs and Services for Children in Urban Poverty

There are currently 12.6 million children living in poverty in the United States, including nearly one-third of our nation's African American and Latino children (Federal Interagency Forum on Child and Family Statistics 2008). Beyond the most obvious home and family stressors that accompany economic deprivation related to food, clothing, and shelter, concentrated urban poverty impacts children indirectly through their schools, playgrounds, and community settings. Neighborhoods are characterized by violence (U.S. Department of Justice 2003), social disorganization (Brooks-Gunn and Duncan 1997), environmental toxins (Evans and Kantrowitz 2002) and schools that are deteriorating, under-performing, and under-resourced (Cappella et al. 2008). Poverty reveals itself for many children in social deficits and cognitive delays that lead to poor academic performance, frequent grade repetition, and early school dropout (Brooks-Gunn and Duncan 1997; Bradley and Corwyn 2002). Parents, often single, under-employed, and with limited access to family or community resources, find themselves overwhelmed and unprepared to promote their children's resiliency to overcome these adverse conditions.

After School Time is Critical

In light of the increasing needs and depleting resources of urban, poor communities, and because the risks associated with poverty have broad impact across multiple settings and domains of children's functioning, new, innovative, and comprehensive models of mental health service delivery are required (Cappella et al. 2008; Atkins and Frazier 2011; Strein et al. 2003; Tashman et al. 2000). Towards that end, after-school programs represent a critically underutilized setting uniquely positioned to promote mental health for children living in urban poverty (Frazier et al. 2007). The hours between 3:00 and 6:00 pm are

considered peak hours for juveniles to experiment with a variety of risky behaviors, including cigarettes, alcohol, sex, and drugs (Gottfredson et al. 2001) and with mild to serious criminal activity, including robbery and assault (Snyder and Sickmund 1999). Current statistics (After-school Alliance 2008) reveal that 28 million school-age children have parents who work outside the home and thus require an after-school care arrangement. One-half of those children are unsupervised after school, including 40,000 kindergarteners. Although less than one-quarter of children (grades K-12) participate in organized after school programs, fifteen million more families report that they would utilize a high quality program if one was available in their community.

There are two reasons to consider after school programs as critical settings through which to support children's healthy development (Frazier et al. 2007). First, mental health promotion is already a central goal of after-school programs, whose natural routines and activities are designed to facilitate social skills building and peer relations, and to enhance social emotional learning (Gottfredson et al. 2004). Second, accumulating data suggests that participation in after-school programs can improve children's psychosocial and academic outcomes, especially for low-income children (e.g., Posner and Vandell 1994; Mahoney et al. 2005).

Empirical attention to after-school time came into view during the early 1990s, when a flurry of studies began to highlight the after school needs of working families and their decisions regarding after school care arrangements (e.g., self-care, relative care, organized program). Overall, findings consistently revealed that for elementary school age children, in particular those in economically disadvantaged communities, participation in after school programs related to fewer internalizing and externalizing symptoms, better social adjustment, and higher reading achievement (e.g., Marshall et al. 1997; Posner and Vandell 1994). Closer attention to the variety of activities and quality of care provided in organized programs revealed the unique contribution of staff-child relationships to children's satisfaction and positive social, behavioral, and academic outcomes (e.g., Pierce et al. 1999; Rosenthal and Vandell 1996; Vandell et al. 1997). This work culminated at the end of the decade with a landmark issue of *The Future of Children* (Larner 1999), which elevated after school time to the same status as childcare, and raised awareness of the need for adequate access to high quality programs for our nation's children.

The Future of Children (1999) spawned an even greater proliferation of related articles during the last several years concluding that for urban, low-income children, participation in high-quality organized after-school activities can positively impact psychosocial functioning. For instance,

Mahoney et al.'s (2005) longitudinal findings suggested that low-income, minority children in grades 1–3 who attended formal after-school programs demonstrated higher reading achievement and expectations for academic success, after controlling for baseline academic functioning, compared to children in other patterns of after-school care. Pierce et al. (2010) found that children with positive child–staff relationships exhibited more gains in reading and math performance over the course of grades 1–3 (for boys and girls), with a similar association between positive child–staff relationships and social skills gains for boys per teacher report. Some data suggest that child–staff relationships were more often identified by Black youth compared to Latino youth, as well as by girls compared to boys; however, bonds with staff emerged as generally protective for all low-income youth (Roffman et al. 2001). Overall, Durlak and Weissberg's (2010) recent meta-analysis of 68 after-school programs revealed significant main effects for improvements in children's positive self-perceptions (e.g., confidence, efficacy), school bonding, behavioral health (i.e., increased pro-social skills, decreased problem behaviors and drug use), and school grades/test scores. Of note, higher-quality programs (i.e., skills training was sequenced, active, focused, explicit) were more likely to lead to improvement in positive social behaviors, problem behaviors, achievement test scores and grades.

Despite encouraging data, Gottfredson et al. (2007) caution that some program features can be linked to poor outcomes in particular among adolescents. Building on prior work (Mahoney et al. 2000; Weisman et al. 2002), Gottfredson et al. examined associations among program structural features and adolescent self-reported delinquency and victimization among 35 after school programs. Higher enrollment and lower aggregate staff education predicted higher substance use and delinquency. Moreover, more opportunities for unsupervised socializing predicted more victimization, aligned with Dishion's (2000; Dishion et al. 1999) notion of deviancy training as one mechanism by which risky behaviors may increase. On the other hand, use of a published curriculum (e.g., Life Skills Training; Botvin et al. 1995) was associated with less reported substance use. These data support Gottfredson et al.'s (2004) earlier findings that programs emphasizing character development and social skills were associated with less delinquent behavior compared to programs without specific social development goals. Taken together, this research offers a compelling argument for bringing mental health supports and services into the after school setting.

Researchers are urged to examine program features and the processes by which program participation impacts child development, with important consideration given to the child-context fit in predicting outcomes (see Mahoney et al. 2009, 2010; Riggs and Greenberg 2004). Recent studies

have also focused on the importance of measuring implementation quality in real-world program settings. For example, level of youth engagement and effort in program activities (Mahoney et al. 2007; Shernoff 2010; Shernoff and Vandell 2007), enjoyment or affective experiences (Roffman et al. 2001; Shernoff and Vandell 2007; Vandell et al. 2005), child-reported program quality (Riggs et al. 2010) all have been associated with positive outcomes. There are data to suggest that sites where staffing is unstable have shown lower student attendance and engagement rates, as well as lower observation ratings of positive climate and management (Cross et al. 2009). Thus, there is growing attention to establishing best practice guidelines and investing in program quality improvement as a lever for change in youth development. Efforts include ongoing staff training, supervision/coaching, and feedback to monitor program quality and youth outcomes (e.g., Armstrong and Armstrong 2008; Sheldon et al. 2010).

The Current Study

Project NAFASI (Nurturing All Families through After School Improvement; Frazier et al. 2007) was designed to examine the mental health and intervention needs of urban after school programs in communities of concentrated poverty. In this study, we describe the feasibility and impact of mental health consultation, training and support for staff at recreational after-school programs. Specifically, we examined how support to after school staff around academic enrichment, coaching behaviors, activity engagement, and behavior management can enhance the benefits of after-school programs for participating children. The first phase of this work involved an extensive period of collaboration between the investigative team and staff at one after school program (Frazier et al. 2012). The goal was to draw on the principles and strategies of a well-researched program, the Summer Treatment Program (STP; Pelham et al. 1997), to support the primary mission and inherent goals of the after school program which focus on children's healthy adjustment across multiple domains of development.

In this paper we report on phase two, during which the adapted intervention was implemented at three new after school sites, to study its feasibility and impact on program quality and children's psychosocial adjustment, compared to three demographically similar comparison sites. We hypothesized that mental health consultation and support to after-school program staff would be well received and that intervention sites would receive higher observer ratings on indicators of program quality compared to no-intervention comparison sites. We were skeptical that our brief intervention would be of sufficient duration or intensity to impact children's functioning; nevertheless, in a preliminary and exploratory set of analyses we examined

changes over time in children's staff-reported academic, social, and behavioral outcomes, compared to their peers.

Method

Participants

Children ($N = 89$ intervention and $N = 38$ comparison) and staff ($N = 15$ intervention and $N = 12$ comparison) at six park district after school programs (three intervention and three comparison sites) in a large, urban, Midwestern city participated. Eighty percent of eligible families participated ($N = 84$ of 105), and 29 % of participating families ($N = 24$ of 84) had more than one child enrolled in the program. Thus, the total sample was comprised of 127 children from 84 families. Among the 21 eligible families who did not participate, 16 were unavailable for Family Night recruitment activities, and five families attended Family Night but declined participation. Child attrition (Time 2: $N = 70$ intervention and $N = 24$ comparison; Time 3: $N = 65$ intervention and $N = 27$ comparison) reflects family mobility and alternative after school care arrangements beyond baseline.

At baseline, children ($N = 118$, 42 % female, 96 % African American) ranged in age from 5 to 14 years old ($M = 8.94$, $SD = 2.19$), and 91 % received free or reduced price lunches at school. Seventy-five percent of children came from single-parent homes. The majority (90 %) of primary caregivers had a high school diploma or GED, but fewer than half of them graduated college with a 2-year (17 %) or 4-year (19 %) degree. Sixty-two percent of primary caregivers were employed full-time. Fifty percent of families' income fell below \$20,000 and seventy-five percent of families' income fell below \$40,000. There were no differences in demographic characteristics between intervention and comparison conditions at baseline.

One hundred percent of staff consented to participate in the research, including six after school program directors, three additional full-time physical instructors, 12 part-time recreation leaders, and six park supervisors. Staff (program directors, physical instructors and recreation leaders; $N = 21$; 100 % African American; 67 % female) ranged in age from 18 to 45+ years. Staff was working at the programs from less than 1 year to 10+ years, and most (88 %) had prior experience working with children. Education ranged from high school diplomas or GEDs to graduate work. Park supervisors ($N = 6$; 100 % African American, 83 % male) ranged in age from 36 to 45+ years, had at least 4 years' experience in recreation, youth or child-care settings and held 2- or 4-year college degrees.

Park after school programs are designed to provide educationally and socially enriching activities from 3:00 to

6:00 p.m. during three seasonal sessions (fall, winter, spring). Programs operate around three 1-h rotations that include academic assistance, physical education, and recreation. Children rotate through activities according to three grade-level groupings (kindergarten–2nd grades; 3rd to 5th grades, 6th to 8th grades). Six parks were selected for this study from among 84 sites around the city by regional and area managers based on the following criteria: south region of the city where poverty rates are among the highest; 100 % African American, low-income families; and high observed rates of social, emotional, or behavior problems exhibited by enrolled children. Three parks were assigned to the intervention condition according to procedures described next, and three parks were assigned to the comparison condition, where staff implemented after school program-as-usual. Comparison parks were offered the intervention the following year.

Park administrators requested that we implement the intervention at the three sites with the highest enrollment for greatest impact that led to a notably uneven sample across intervention and comparison conditions. Child enrollment ranged from 13 to 38 ($M = 36$ and 17 for intervention and comparison parks, respectively). Despite the differences in enrollment, community demographics and program structure, staff, procedures, and activities were comparable. Parents enroll their children in the program for modest fees per each 10-week session that provides 100 % of the operating budget. Park enrollment included children from 32 neighborhood K-8 elementary schools. Sixty percent of schools were characterized by a population of students who were 90 % African American and 70 % from low-income families. On average, approximately 40 % of 3rd to 8th grade students' achievement test scores fell below state standards for reading comprehension and math.

Measures

Strengths and Difficulties Questionnaire (Goodman, 2001)

This 25-item parent-report measure was designed as a brief screening tool for emotional and behavioral disorders in children and adolescents ages 4–17 and was used to assess children's mental health needs (separate scales used for ages 4–11 and ages 12–17). The response scale has three anchors ($0 = \text{Not true}$, $1 = \text{Somewhat true}$, and $2 = \text{Certainly true}$). The measure includes five clinical scales: hyperactivity/inattention, emotional symptoms, conduct problems, peer relationship problems, and prosocial behavior. For the current sample, internal consistency for Total Difficulties for 4–11 year olds was $\alpha = .85$ and Total Difficulties for 12–17 year olds was $\alpha = .89$. Given that the service model was implemented as a universal intervention with broad staff and child needs in mind, and hence

Table 1 Descriptions of PPRS domains (Vandell et al. 2005)

Domain	Definition	Exemplar
Supportive relations with adults	Staff are engaged with youth; positive behavior management; warm responses to children's comments and questions	Staff praise students as they practice new skills; respond quickly and warmly to casual comments and conversation
Supportive relations with peers	Youth are positively engaged with each other; resolve conflicts and show teamwork	Youth negotiate calmly when disagreements arise and celebrate each other's successes
Level of engagement	Youth are interested and engaged in planned activities	Youth show excitement and involvement in games by encouraging peers, cheering
Opportunities for cognitive growth	Activities encourage youth to plan, synthesize ideas, identify and solve problems; staff provide instruction and ask "why, what if, how" questions	Youth plan an activity; staff supports the planning by encouraging youth to think systematically
Appropriate structure	Transitions between activities are orderly; youth understand activities; staff support one another	Youth know where to go, staff monitor students during transitions; youth move easily into new activities
Over-control	Staff makes decisions; students have few choices; minimal support for youth to problem-solve peer conflicts	Staff design the activity schedule; minimal attention to youth preferences; few opportunities for youth to lead
Chaos	Students exhibit inappropriate and rude behavior; staff effort to manage disruptive or disrespectful behavior is ineffective	Youth argue, lots of yelling, poor communication and minimal problem solving
Mastery orientation	Staff demonstrate and model new skills for youth; activities appropriately challenge youth; youth work on skills building projects	Staff demonstrate new skills; Youth have opportunities to practice and receive feedback on new skills

expected to be necessary but not sufficient to meet the needs of youth with more intensive difficulties, a cut-off score of 13 (upper quartile of students in the present sample; upper 15 % of children in the nationally normed sample of 4–17 year olds) was selected to divide children into high and low-risk groups (i.e., risk for mental health difficulties) within each condition for analyses on psychosocial outcomes (Intervention Condition: $N = 24$ High-Risk and 65 Low-Risk and Comparison Condition: $N = 9$ High-Risk and 29 Low-Risk).

Staff Satisfaction Survey

After school staff, including full-time directors and physical instructors and part-time recreation leaders completed surveys designed for this study related to feasibility, in particular their use of and satisfaction with program consultation and with the primary, recommended strategies. Seven questions (and their response options) included: (1) How productive were large group meetings with the intervention team ($1 = \text{Always productive}$, $2 = \text{Sometimes productive}$, and $3 = \text{Rarely productive}$), (2) How many changes resulted from large group meetings ($1 = \text{Many changes}$, $2 = \text{Some changes}$, $3 = \text{Few changes}$), (3) How often did you use each intervention strategy ($1 = \text{Always}$, $2 = \text{Sometimes}$, $3 = \text{Rarely}$), (4) How useful was each intervention strategy ($1 = \text{Very much}$, $2 = \text{Somewhat}$,

$3 = \text{Not much}$), (5) How likely are you to use each strategy again ($1 = \text{Very likely}$, $2 = \text{Somewhat}$, $3 = \text{Unlikely}$), (6) How effective do you expect each strategy to be ($1 = \text{Very effective}$, $2 = \text{Somewhat}$, $3 = \text{Not effective}$), and (7) What kinds of changes did you experience or observe in interactions between children and staff ($1 = \text{Much worse}$, $2 = \text{Little worse}$, $3 = \text{No change}$, $4 = \text{Little better}$, $5 = \text{Much better}$)?

Promising Practices Rating System (PPRS; Vandell 2005)

The PPRS observation tool was designed to assess after-school program quality. Time interval observations capture program activities along eight domains: *supportive relations with adults* (e.g., staff communicate high expectations, respond to youth with warmth), *supportive relations with peers* (e.g., youth interact positively, share, appear relaxed and involved), *level of engagement* (e.g., youth appear interested, concentrated on activity), *opportunities for cognitive growth* (e.g., activities promote higher-order thinking, planning, problem-solving), *appropriate structure* (e.g., activities are organized, smooth transitions), *over-control* (e.g., students have few opportunities for choice), *chaos* (e.g., high rates of disruptive behavior), and *mastery orientation* (e.g., emphasis on skills-building). Table 1 provides additional description and exemplars of each domain.

In accordance with recommendations by developers of the tool, observations were conducted in pairs, in all rotations (academic assistance, physical education, recreation), and in each participating site at every time point. Each observer independently recorded a rating for each domain on a four-point scale anchored by specific examples (1 = highly uncharacteristic to 4 = highly characteristic), for a total of six 10-min observations. Ratings were averaged across observers for each domain, within each rotation, at each time point. These averages were entered into the analyses as indicators of program quality. Observers were blind to condition and trained to reliability by the second author by reading and reviewing contents of the rating system, viewing videotaped examples of after school programs for practice coding, discussing examples, and conducting live practice observations with feedback.

Staff–Student Report (Vandell, 2005)

After-school program directors reported on each child's psychosocial adjustment on the *Staff Student Report*. The measure draws items from several other standardized measures related to work habits (Mock Report Card, Pierce et al. 1999; $\alpha = .95$), social skills (Social Skills with Peers scale from the Teacher Checklist of Peer Relations; Coie and Dodge 1988; 7 items on a 5-point scale, $\alpha = .92$), and peer behaviors (Child Behavior Scale; Ladd and Proffitt 1996; 17 items on a 3-point scale related to aggression with peers [$\alpha = .92$] and prosocial behavior with peers, [$\alpha = .86$]).

Procedure

This study was conducted in accordance with American Psychological Association Ethical Guidelines and approval from the Institutional Review Board for recruitment, informed consent, and data collection procedures.

Recruitment and Data Collection

All staff members were invited to participate during an information meeting with staff and supervisors at each site. Staff provided written informed consent and completed questionnaires at three time points (baseline, mid-year, post-test) corresponding to the three seasonal sessions of the program. The investigative team provided lunch for staff during completion of research measures in lieu of individual compensation, per request of the park district.

Child recruitment at both intervention and comparison sites began during the first week of the after-school program fall session with a Family Night information session during which dinner and childcare were provided and a raffle for school supplies was included to encourage

attendance. The research team provided families with detailed information regarding research objectives and procedures, data collection needs, and reimbursement guidelines. Parents who agreed to participate provided written informed consent, completed baseline data packets, and received \$20 for participation during the Family Night.

Intervention Adaptation, Development, and Implementation

During Year 1 the investigative team collaborated with staff at one park after-school site to consider the principles and adapt the strategies from an efficacy-based, manualized intervention model (Summer Treatment Program; STP; Pelham et al. 1997), focused on facilitating positive peer socialization, reducing disruptive behaviors, increasing prosocial behaviors, and improving academic performance. We selected the STP because it is designed to integrate social emotional learning into the natural course of recreational activities. It is highly structured and standardized, based on a systematic reward and response cost system. Two decades of empirical research have demonstrated that the STP is effective at reducing symptoms and improving children's functioning across multiple domains (e.g., rule following, classroom productivity, sports skills, self-esteem), age groups, family income levels, parental marital status, and for children with comorbid aggression (e.g., Pelham et al. 2000, 2005; Chronis et al. 2004; Fabiano et al. 2004). Collectively, the data on impact, flexibility of intervention components, a focus on reducing impairment, high consumer satisfaction, and focus on recreational contexts made the STP an ideal clinical intervention for adaptation to the community after-school program context.

Following organized weekly meetings; twice weekly participant observation; extensive and informal dialogue; opportunities for modeling and demonstration; practice with performance feedback; trial-and-error; problem-solving, and end of year interviews that characterized the collaboration in Year 1, the research team and park staff together had arrived at a set of intervention principles and tools that (1) drew heavily on the reinforcement and learning principles of the STP, (2) meaningfully supported the inherent goals of the after school program by supporting activity engagement and instruction, behavior management, and academic enrichment and (3) were appropriate to the staff, setting and population of the after school programs and seemingly manageable and sustainable for staff.

The five primary intervention tools included Clear Rules, Group Discussion, Good Behavior Game, Peers as Leaders, and Good News Notes. First, Clear Rules were decided by consensus to be (1) Follow directions, (2) Respect people, place, and things, (3) Be in your assigned

area, and (4) Participate. Second, the Group Discussion provided a daily structure by which staff facilitated a discussion with children about program rules, routines, and expectations as well as rewards and consequences for compliance and rule violations. Third, the Good Behavior Game, utilized effectively in schools for over three decades (Barrish et al. 1969; Embry 2002), is a group-wide, contingency-based behavior management system by which children earn small group rewards (e.g., 5 min of free time) based on rule following behavior. Fourth, Peers as Leaders responded to high staff-child ratios by providing pre-adolescents an opportunity to support younger students with homework, games, and activities and to develop age-appropriate levels of leadership skills, responsibility, and accountability. Staff-selected peer leaders received training related to peer-assisted learning strategies for reading (Fuchs and Fuchs 2000), how to facilitate games and activities for younger kids, and how to encourage prosocial behaviors among younger children through praise and social reinforcement. Finally, Good News Notes (Rubenstein et al. 2000) are small certificates used to reward children for specific skills and behaviors that help staff to identify targeted goals for individual students, to praise students for their accomplishments, and to share children's progress with families. See (Frazier et al. 2012) for a more detailed account of Year 1's intervention adaptation and components.

In Year 2, intervention at the experimental after school sites proceeded through three stages: (1) relationship building, resource mapping, and needs assessment, (2) intervention implementation and support, and (3) sustainability planning. Social work students were trained as mental health consultants, supervised by clinical psychology interns, who were in turn supervised by the investigative team, thereby mirroring the workforce of a community mental health agency. After-school program staff participated in organized weekly meetings where dialogue focused on strengths and challenges of the program site, as well as intervention principles and strategies. Support included frequent, ongoing, and informal discussions and twice weekly (6 h total) real-time consultation during the after school program with ongoing opportunities for demonstrating, trouble-shooting, and coaching staff in the use of specific intervention tools. Staff at each intervention site worked closely and flexibly with their mental health team to prioritize and modify interventions in accordance with the needs and strengths of their park.

Adherence to the key ingredients of each tool was emphasized by the mental health team and often the focus of weekly meetings; in fact, this phase of the study provided an opportunity to create adherence tools that in turn were used to examine sustainability of the intervention during a follow-up year (Lyon et al. 2011). Although the tools

themselves were not available for adherence checks during this phase of the research, the intensive structure in place for implementation and supervision was informed by a measurement feedback system approach (Kelley and Bickman 2009) and reflected a growing literature that suggests workplace support is important for ensuring high quality implementation, sustaining new and complex practices, and can lead to better outcomes (Herschell et al. 2010).

Data Analytic Plan

Data analysis began with an examination of children's parent-reported mental health needs. Feasibility of intervention is summarized based on end of year interviews with park staff. The primary analytic approach for examining impact of intervention on program quality and children's psychosocial outcomes was mixed-effects regression modeling with point-in-time contrasts. The mixed-effects regression is an extension of the ordinary linear regression (see Hedeker and Gibbons 2006). These analyses examine whether groups differ as a function of time (i.e., intervention versus comparison group; high-risk vs. low-risk children), controlling for baseline differences. In contrast to the traditional repeated measures analysis of variance, this analytic approach utilizes all data collected longitudinally on all participants and accounts for within-subject correlations between observations. These methods assume that missing data are ignorable conditional on the model covariates (e.g., group membership) and available data for that participant (Rubin 1976). Specifically, models were tested with individual point-in-time contrasts treating groups (high vs. low-risk and intervention vs. control) and time as fixed effects and the intercept as a random effect controlling for covariates. Overall effects of intervention were tested using group \times time interactions, and group differences at each time point.

Results

Mental Health Needs

Independent samples t tests were used to compare parent-reported mental health needs of children in this study ($N = 107$) with youth ages 4–17 in a nation-wide, epidemiological sample ($N = 10,367$; Bourdon et al., 2005). Children in the present study exhibited more parent-reported peer problems ($M = 2.2$ vs. 1.4, $t_{107} = 4.4$, $p < .001$, Cohen's $d = .46$), hyperactivity-inattention ($M = 3.9$ vs. 2.8, $t_{107} = 4.4$, $p < .001$, Cohen's $d = .40$), conduct problems ($M = 1.9$ vs. 1.3, $t_{107} = 2.8$, $p = .006$, Cohen's $d = .27$) and Total Difficulties ($M = 9.8$ vs. 7.1, $t_{107} = 4.3$, $p < .001$, Cohen's $d = .42$) compared to the

normative sample. There were no differences between the two samples on emotional symptoms or prosocial behavior. Intervention and comparison children differed significantly only on prosocial behavior, such that children in the comparison condition ($M = 9.00$, $SD = 1.4$) were rated more prosocial than children in the intervention condition ($M = 7.96$, $SD = 2.0$), $t_{106} = 2.79$, $p = .006$.

Feasibility

Physical instructors and recreation leaders ($n = 11$) at the intervention sites reported on their use of recommended strategies during end-of-year interviews. All items utilized a three-point Likert response scale from 0 (negative) to 2 (positive). Staff reported variable use of intervention tools (range = .50–1.64, $M = 1.25$, $SD = .45$), though three strategies emerged as clear favorites—Clear Rules, Good Behavior Game, and Peers as Leaders—used by staff sometimes or always (M ranging from 1.10 to 1.64, SD ranging from .52 to .67) and reported to be somewhat or very useful (M ranging from 1.50 to 1.88, SD ranging from .35 to .53). Nine of ten staff reported that they would be very likely to use Clear Rules and Peers as Leaders again, and eight of ten staff reported that they would be very likely to use the Good Behavior Game again. Finally, staff

reported in a series of items on a 0 (much worse) to 4 (much better) scale improved relationships among children and staff (M ranged from 3.09 to 3.45, SD ranged from .65 to 1.14). More detailed feasibility data have been reported previously (Lyon et al. 2011).

Effectiveness

Program Quality

Independent program observations were used to examine effectiveness of the intervention across eight domains of program quality. High quality programming is reflected by *high scores* on six domains (supportive relations with adults, supportive relations with peers, level of engagement, opportunities for cognitive growth, appropriate structure, and mastery orientation) and *low scores* on two domains (over-control and chaos). Means and standard deviations are reported in Table 2. Type I error was defined at the level of $p < .05$.

There was no significant time by condition interaction for supportive relationships with adults, supportive relationships with peers, level of engagement in planned activities, appropriate structure, opportunities for cognitive growth, mastery orientation or chaos. There was, however,

Table 2 Outcomes over time for intervention and comparison conditions

Outcome measures	Comparison			Intervention		
	Baseline <i>M(SD)</i>	Mid-year <i>M(SD)</i>	Post-test <i>M(SD)</i>	Baseline <i>M(SD)</i>	Mid-year <i>M(SD)</i>	Post-test <i>M(SD)</i>
Program quality						
Supportive relations with adults	2.3 (0.7)	2.6 (0.5)	2.1 (0.6)	2.2 (1.0)	2.2 (0.9)	2.3 (0.4)
Supportive relations with peers	3.2 (0.4)	2.3 (0.6)	2.2 (0.6)	3.1 (0.6)	2.0 (0.6)	2.4 (0.5)
Level of engagement	2.6 (0.9)	2.9 (0.6)	2.8 (0.8)	2.9 (1.0)	2.4 (1.1)	2.8 (0.7)
Opportunities for cognitive growth	1.2 (0.3)	1.4 (0.8)	1.6 (0.7)	1.0 (0.0)	1.6 (1.0)	1.5 (1.0)
Appropriate structure	2.5 (0.9)	2.7 (0.7)	2.6 (0.8)	2.9 (0.4)	2.0 (1.2)	2.2 (0.5)
Over-control	1.4 (0.4)	1.9 (0.8)	2.7 (0.8)	1.4 (0.5)	1.6 (0.3)	1.4 (0.4)
Chaos	1.5 (0.3)	1.9 (0.5)	1.6 (0.4)	2.5 (1.1)	2.7 (1.1)	2.0 (0.6)
Mastery orientation	1.7 (0.6)	2.5 (0.9)	1.8 (0.8)	1.7 (1.2)	1.9 (0.6)	1.6 (0.8)
Children's psychosocial outcomes						
High-risk						
Work habits	2.1 (0.1)	2.4 (0.6)	2.3 (0.9)	2.3 (0.9)	2.8 (1.3)	2.9 (1.9)
Social skills	1.8 (0.6)	2.3 (0.4)	2.7 (0.5)	2.8 (0.8)	2.6 (1.1)	3.1 (2.8)
Aggression	0.8 (0.6)	0.4 (0.5)	0.8 (0.5)	1.0 (0.7)	0.8 (0.8)	1.0 (0.8)
Prosocial behavior	0.6 (0.5)	1.0 (0.1)	1.1 (0.3)	1.1 (0.5)	1.3 (0.5)	1.3 (0.3)
Low-risk						
Work habits	2.9 (0.8)	2.8 (1.2)	2.8 (1.4)	3.3 (1.1)	3.3 (0.9)	3.3 (0.9)
Social skills	2.8 (0.5)	2.9 (0.7)	3.0 (0.6)	3.2 (0.6)	2.7 (0.7)	3.3 (0.7)
Aggression	0.4 (0.5)	0.4 (0.4)	0.4 (0.5)	0.4 (0.5)	0.4 (0.5)	0.7 (0.7)
Prosocial behavior	1.2 (0.5)	1.0 (0.6)	1.0 (0.5)	1.3 (0.4)	1.4 (0.5)	1.3 (0.3)

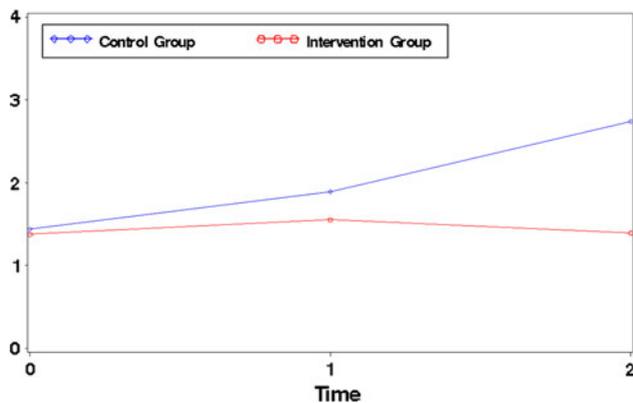


Fig. 1 Over-control over time by condition

a significant time by condition interaction for *over-control* (i.e., activities are staff-directed with little opportunity for student choice, involvement, or creativity) in the predicted direction, $F_{2,28} = 3.47$, $p < .05$, such that programs in the comparison condition were rated more controlling at post-test compared to baseline ($p = .0004$) and mid-year ($p = .008$) ratings (Fig. 1). Comparison programs also were rated more controlling at post-test than intervention programs ($p = .0009$), which showed no change in ratings across time, suggesting that the intervention interrupted a naturally occurring increase in over-control.

In addition to the interaction effect, there was a significant main effect of time on *supportive relations with peers* (i.e., peer interactions are positive, respectful, and productive), $F_{2,28} = 12.13$, $p = .0002$, such that scores for both intervention ($p = .0006$) and comparison ($p < .01$) programs declined significantly from baseline to mid-year. There was a significant main effect of time on *chaos* (i.e., misbehavior, disruption, minimal student engagement in sanctioned activities and poor staff control), $F_{2,28} = 3.83$, $p < .04$, such that intervention programs were rated less chaotic at post-test compared to baseline ($p < .04$) or mid-year ($p < .02$). The effect of intervention on individual rotations (i.e., homework, sports, recreation) also was examined. There was no rotation by intervention interaction for any program quality domain, suggesting that findings did not differ by activity.

Children's Psychosocial Outcomes

Program director reports of children's psychosocial adjustment assessed intervention effectiveness on work habits, social skills, prosocial behavior, and aggression. Means and standard deviations are reported in Table 2. Type I error rate was defined by $p < .05$, and findings at the level between $p = .05$ and $p = .10$ are reported as trends. Children's parent-reported mental health needs were used to classify children into high and low-risk

groups as described above. There were no significant 3-way time (baseline, mid-year, post-test) \times condition (intervention vs. comparison) \times group (high-risk vs. low-risk) interactions and no significant differences by condition related to work habits or aggression.

In the domain of *social skills*, a significant time \times condition interaction, $F_{2,100} = 4.94$, $p = .009$, indicated that low-risk intervention children had nearly better social skills at post-test than low-risk comparison children ($p < .10$), controlling for significant baseline differences ($p < .02$). There were no differences across time between high-risk intervention and comparison children.

In the domain of *prosocial behavior*, there was an overall main effect of intervention, $F_{1,102} = 9.65$, $p < .003$. High-risk intervention and comparison children showed no differences across time, controlling for baseline differences. Within the low-risk group, however, children in the intervention condition were more prosocial at mid-year ($p < .006$) and post-test ($p < .06$) compared to children in programs receiving no intervention, controlling for baseline differences ($p < .05$).

Discussion

This study examined the mental health and intervention needs within after school programs in urban, high poverty communities and launched a program of research focused on supporting after school programs to achieve their goal of providing high quality, mental health promoting activities for children. A primary emphasis of intervention was training frontline staff on the use of specific tools designed to improve student functioning. Findings revealed significant mental health difficulties among participating children, in particular high rates of peer problems, inattention and hyperactivity compared to peers in a normative sample, thereby confirming the needs acknowledged by area and region managers when they selected parks for participation. These findings support our effort to provide consultation for staff to meet the high needs of their enrolled children. Toward this goal, an efficacy-based, manualized intervention was adapted to accommodate the unique strengths and needs of the staff and setting at three intervention sites toward impacting activity engagement and behavior management and improving program quality and children's psychosocial outcomes.

Enrollment and satisfaction data suggest that after school staff was highly receptive to training, support, and practical strategies for building capacity in their programs to meet the extensive and often intensive social, emotional, and behavioral needs of participating children. Feasibility data revealed three most frequently used strategies: Clear Rules, Good Behavior Game (GBG), and Peers as Leaders

(PALS). As illustration of the need for staff consultation, early in the process staff expressed reservations about requiring children to adhere to Clear Rules because, they reported, rules meant discipline, and discipline was understood as appropriate in school but contrary to their setting's emphasis on play and fun. Extensive discussion grounded in learning theory helped staff to re-conceptualize rules as critical to maintaining a safe and fun environment (i.e., even games have rules). Similarly, several challenges to implementing the GBG in the after school setting led to creative problem-solving around how to make it mobile, for example, for use during sports and outdoor activities (e.g., using a necklace of binder clips as the bank of points). Finally, PALS met staff goals to provide more developmentally appropriate roles and activities for their pre-adolescent participants, thereby preparing them for summer employment as junior recreation leaders.

Though feasibility and acceptability are critical, they are of course not sufficient to justify intervention implementation or dissemination. A service must also demonstrate positive impact on program functioning and youth outcomes. With regard to observed program quality, effectiveness results indicated a modest but significant impact of the intervention on a few domains. In the expected direction, intervention programs were observed to have less chaos over time, while comparison programs were observed to increase in over-control. Scores for supportive peer relationships declined over time for programs in both intervention and comparison conditions. Taken together, these findings suggest that an emphasis on activity engagement and behavior management, though modestly helpful at impacting control and chaos, was insufficient to impact on setting-level processes more broadly. Moreover, the decline in both conditions in peer relationships, and overall low scores on mastery orientation and opportunities for cognitive growth, points to the overwhelming need and tremendous opportunity for mental health support in these settings, and suggests that additional treatment components directly targeting activity content and social relationships may be necessary in order for programs to deliver high quality services that in turn achieve their mental health promoting goals.

Baseline data revealed quite a bit of variability in quality across domains, ranging from low ratings in mastery orientation and opportunities for cognitive growth, for instance, to high ratings for supportive relationships with peers in both conditions. Our data mirror the reported variability in program quality in national samples that is greatly influenced by differences in staff-level skills and implementation style, which set high-quality programs apart from low-quality ones. These program characteristics have been described elsewhere as “pedagogy profiles” and emphasize that high quality programs provide key

developmental experiences that: (1) are characterized by a supportive environment, (2) occur within structured interaction between adults and youth, and (3) incorporate opportunities for meaningful and reflective engagement by participating youth (see Smith et al. 2010).

In addition to observed changes in program quality, there were a few modest but significant and notable changes in children's social skills and prosocial behaviors. Specifically, low-risk children in the intervention condition exhibited post-test social skills marginally above those of low-risk children in the comparison condition. Additionally, high and low-risk intervention children both maintained levels of prosocial behavior that were marginally higher than those of their comparison group peers. Although the intervention was not sufficiently intensive to reduce aggression, these findings offer promising evidence of the potential to impact children's individual adaptive functioning through consultation to staff in after school programs.

These results are especially noteworthy given evidence that for economically disadvantaged youth, participation in high quality after school programs contributes positively to academic, social, and behavioral adjustment (e.g., Gottfredson et al. 2005). Most recent work is focused on identifying quality indicators, that is, the common features of programs that contribute to positive outcomes for children (e.g., Gottfredson et al. 2004; Rosenthal and Vandell 1996). For instance, Gottfredson et al. (2004) found that programs emphasizing social skills and character development decreased delinquent behavior among middle school students to a greater degree than programs without social development goals. Gottfredson's more recent findings, though, caution that some program features predict poor outcomes for youth, in particular for adolescents. For instance, enrollment and staff education were important predictors of self-reported substance use and delinquency, and more frequent unsupervised socializing predicted more victimization. In the present study, the strong and positive findings related to feasibility coupled with the modest but encouraging effectiveness data suggest that this study was an important first step toward bringing principles and strategies from efficacy-based clinical trials into this community practice setting.

These results should be considered with some caution in light of inherent limitations to the research. First, staff was both the recipient of consultation and the informant on children's psychosocial adjustment. Although program features were assessed through direct observations to complement staff report, in future work child-level observations will be an important addition, and we have added those to our current, ongoing study that extends this work. Second, although program directors, full-time physical instructors and part-time recreation leaders all participated

in the intervention, as well as some site supervisors, only reports from after-school program directors were included in the analyses. As such, data may reflect individual differences in tolerance and expectations for children's behavior and may not adequately reflect differences in children's functioning across rotations. This decision reflected the fact that program directors were most familiar with the children. Although it would be informative to examine differences in children's program experiences and adjustment by rotation (e.g., homework versus sports), staff roles were fluid and activities often unpredictable, such that it was difficult to connect a particular staff to a particular rotation despite the design of the program. Nevertheless, observational data were examined by rotation and no differences emerged. Third, in the spirit of Step 1 of the Clinic/Community Intervention Development Model (CID; Hoagwood et al. 2002), only three after school sites participated in the intervention, compared to three demographically matched comparison sites, therefore limiting the generalizability of findings. Future research will need to include a larger number of sites representing a wider range of demographic and programmatic characteristics to determine how best to match the intervention process and strategies to individual program goals and needs. Finally, it is worth noting that this work is one piece of a much larger program of research examining capacity building within families, schools, and after-school programs. In fact, although we considered adapting and implementing the parent component of the STP in this study, we determined it to be beyond the scope of our resources at the time we were beginning this collaboration with the park system; however, family groups are currently being implemented and examined as part of a subsequent study that builds on the work presented here.

Implications for Research, Policy, and Practice

Overall, the intervention impacted low-risk children more than high-risk children. Notably, even low-risk children still exhibited mental health difficulties that exceed those of a normative population, as indicated by the findings on mental health needs. Nevertheless, findings not unexpectedly suggest that the universal intervention may be necessary but not sufficient to enhance the goals and meet the needs of urban after school programs. Applying a public health framework, the universal intervention designed to benefit all children may help to prevent the emergence of mental health difficulties and promote the likelihood of healthy outcomes for some children. However, an additional layer of targeted strategies may be necessary for children whose disruptive behaviors already reduce the benefits of program participation for other children, via their negative impact on staff satisfaction, peer relations

and overall program functioning. Targeted intervention and support may help to limit disruption caused by their participation, and reduce the strain on staff and setting characteristics. However, more intensive interventions likely will place more demands on program supervisors and organizational characteristics that will require support and perhaps linkages with local community mental health resources.

In fact, the investigative team's intensive experience in these after school sites and the extensive relationships built with staff and supervisors suggests that effective and sustainable change at a program level, sufficient to promote adaptive functioning and minimize conduct problems at a child level, likely will require more concentrated intervention at an organizational level. This is consistent with a large and accumulating literature suggesting that an organization's social context can impact service quality and outcomes as well as service providers' successful and sustainable adoption of innovative technologies (Glisson and Schoenwald 2005). Therefore, the current, ongoing study in this program of research examines how organizational social context operates within urban after school programs. Data will inform the consultation model, in particular building systematically on its organizational components to support the inherent, mental health promoting goals of urban, publicly funded after school programs.

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