



Published in final edited form as:

*Asian Am J Psychol.* 2014 June 1; 5(2): 145–152. doi:10.1037/a0036185.

## Applying Public Health Frameworks to Advance the Promotion of Mental Health Among Asian American Children

**Keng-Yen Huang, Esther Calzada, Dimitra Kamboukos, Dana Rhule, Kirsten Cullen Sharma, Sabrina Cheng, and Laurie Miller Brotman**

Department of Population Health New York University School of Medicine

### Abstract

Asian American (ASA) children experience high rates of mental health problems. Although there is a pressing need to utilize population approaches, emerging frameworks from the fields of public and population health have not been applied to ASA children. This paper addresses this gap by first discussing applications of the National Prevention Strategy (NPS), a population strategy developed from the Social Determinants of Health perspective, to guide ASA prevention work. Next, we provide a practical example to illustrate how the NPS can be applied to prevention program design (using *ParentCorps* as an example) and dissemination and implementation processes to broadly address ASA children's mental health needs. Finally, we present preliminary data on the feasibility of applying this population strategy to ASA families and a framework for researchers who are considering disseminating and implementing evidence-based programs to ASA or ethnic minority pediatric populations.

### Keywords

Asian American; Health Disparities; Social Determinants of Health; Implementation; Dissemination; Population Approach; Prevention; Early Childhood

### Mental Health Problems in Asian American Children

Asian Americans (ASAs), comprising many different ethnic groups, represent one of the fastest growing ethnic minority populations in the United States (U.S.) and are projected to make up nearly 10% of the total population by the year 2050 (US Census Bureau, 2008, 2011). ASAs are often described as the “model minority” based on the perception that they fare well across multiple indicators of education, socioeconomic mobility and health (Chao, Chiu, & Lee, 2010; M. S. Chen & Hawks, 1995). There is, however, little empirical support for the “model minority” myth with regard to mental health among ASA children (Huang, Calzada, Cheng, & Brotman, 2012b). Studies of older ASA children indicate relatively higher rates of clinically impairing internalizing problems (e.g., depression, suicide and anxiety disorders) compared with peers from other pan-ethnic groups (Austin & Chorpita, 2004; Chang, Morrissey, & Koplewicz, 1995; Choi, Meininger, & Roberts, 2006; Lee, Lei, & Sue, 2001; Nguyen et al., 2004; Okazaki, 2000). Internalizing problems in childhood can

lead to major life-long impairments, making the promotion of child mental health among ASA children an important public health priority.

## **Public Health Approach to Address the Mental Health Needs of ASA Children**

Population health, including mental health, is largely influenced by social determinants. The Social Determinants of Health framework posits that population health status is the result of a complex interplay of social and economic systems, including the social and structural conditions in which people are born, grow, live, and work, as well as the systems that are designed to address health problems (CDC., 2010; Dunn & Dyck, 2000; WHO, 2008). Population health is shaped by the level of income, power, and resources available at national, local, community and family levels, and these factors are responsible for most health disparities and inequities (CDC., 2010).

According to this framework, mental health problems among ASA children may stem from inequalities in social status, service access and the quality of living environments (e.g., home, school, neighborhood) (Dunn & Dyck, 2000; Frank, 1995; Satcher, 2010). Many ASA families, especially recent immigrants, have relatively low financial capital, low levels of English proficiency, and high levels of stress (e.g., overcrowded homes, long work hours, high acculturation stress, intergenerational conflict, unsafe neighborhoods) (Hernandez, 2004; Huang, Calzada, et al., 2012b; Rhee, 2009). These stressors may undermine positive parenting. Although ASA parents appear to provide their children with more instrumental support (e.g., helping with homework), they are less likely to engage in play with their children and more likely to discourage or punish their children's negative emotions (Chun & Akutsu, 2009; Huang, Calzada, et al., 2012b). Such parenting practices are associated with mental health problems among young ASA children (Huang, Calzada, et al., 2012b; Huang, Cheng, Calzada, & Brotman, 2012).

From a services perspective, ASA families are far less likely than other pan-ethnic groups to participate in early intervention programs or utilize mental health services, in part because culturally-competent programs provided by bilingual mental health professionals are not available in the communities where ASA families live (S. Chen, Sullivan, Lu, & Shibusawa, 2003; Clements, Barfield, Kotelchuck, & Wilber, 2008; Garland et al., 2005). To most effectively address ASA children's mental health needs and minimize disparities, preventive effort need to address a wide range of individual, family, and service sector determinants (Huang, Calzada, et al., 2012b).

Consistent with the social determinants perspective, the US National Prevention Council and Office of the Surgeon General proposed the National Prevention Strategy (NPS) in 2011. The NPS offers a series of integrated preventive action recommendations and provides a vision for improving population health and addressing health disparities (National Prevention Council, 2011). Importantly, in line with empirical evidence, the NPS recommends that preventive actions consider multiple determinants at the individual, family, community and policy levels. From the individual and family perspectives, preventive strategies may include exposing ASA parents to evidence-based strategies and supporting

them to adopt practices that promote developmental competencies. Preventive strategies may also include targeting high-risk groups, such as children of ASA immigrant families with low English proficiency, or families living in neighborhoods with low financial and social capital.

From the community perspective, preventive strategies for reducing health disparities may include involving community members in problem solving processes and providing community stakeholders and agencies with tools and information to increase community and family support strategies (e.g., enhanced social networks, community connectedness) to promote mental health (Fawcett et al., 1995; Laverack, 2006). By involving community members who are culturally and linguistically matched to the families served, this approach can increase trust, more effectively engage families, reduce barriers to services, increase potential for sustainability of services, and improve the status of social determinants (Li & Browne, 2000; Wong, 1999). For example, community health workers (who are not mental health professionals) can be trained in evidence-based mental health practices and support community members to acquire knowledge and adopt behavior changes that may promote mental health. A review of the community health worker model suggests that under the right conditions (e.g., appropriate training, supervision and support), this approach can lead to significant health gains (HRSA, 2007; WHO, 2006).

Another community-level strategy for addressing health disparities is to increase access to quality care in community settings. Although numerous high-quality and effective preventive interventions for young children can be applied to ethnic minority populations (Sanders, 2008; Shonkoff & Phillips, 2000), such programs are often not accessible to ASA families, especially to non-English-speaking immigrant families (Lau, Fung, Ho, Liu, & Gudino, 2011). Because many ASA families tend to utilize services when they are offered in non-traditional medical settings (e.g., community centers or agencies), the provision of evidence-based preventive services in community-based organizations (CBO) that have experience working with diverse cultural groups or the specific cultural group served by the CBO has the potential to effectively reach ASA populations.

At the macro/policy level, preventive strategies for reducing health disparities may include building strong multi-sector partnerships. With the U.S. economic downturn and limited financial resources for mental health services, partnership efforts across sectors (government, business, media) and community-based agencies (advocacy, coalition, health services) are highly encouraged by the U.S. National Prevention Council. A partnership approach can help create new opportunities to foster feasible, affordable and efficient preventive service options to promote healthy communities among ASA and other underserved populations (National Prevention Council, 2011). For example, academic institutions, CBOs and local government may partner to share knowledge and resources, allowing communities to develop stronger service support networks and referral mechanisms to efficiently utilize limited community health resources. Local media can also play an important role by disseminating community service information to increase community members' awareness and utilization of services.

Despite the potential of applying the NPS recommendations to reducing mental health disparities in ASA children, they have rarely been integrated in prevention program design and implementation. In the next section, we provide a practical example to demonstrate how the NPS's multiple-determinants approach to health can be applied to child mental health promotion among ASA populations. We describe how *ParentCorps*, a family-focused preventive intervention for young children and families, considers individual, family and community-level determinants in line with NPS recommendations. Although the example provided in this paper is specific to ASAs, the methodology can be extended to other underserved pan-ethnic minority populations.

## A Practical Example *ParentCorps* for Young Children and their Families

### Background

*ParentCorps* is a culturally-informed family-focused, school-based intervention for young ethnically diverse children (Brotman et al., 2011; Brotman et al., 2013; Brotman, Kingston, Bat-Chava, Caldwell, & Calzada, 2008). *ParentCorps* aims to promote child social and emotional skills and early learning by increasing caregivers' positive behavior supports (e.g., nurturing relationships, proactive strategies), parent involvement in education, and effective behavior management (e.g., limit setting, consistent consequences for misbehavior).

To be relevant to diverse cultural groups, *ParentCorps* was built on an extensive body of cross-cultural parenting and child development research (Brotman et al., 2011). *ParentCorps* considers the influence of stressors on parenting and child development, the broad spectrum of family strengths (e.g., traditional cultural values, commitment to children's academic success) and the range of family circumstances (e.g., education, marital status, financial and psychological resources) seen in urban communities (Blair & Raver, 2012; Conger et al., 2002; McLoyd & Vonnie, 1998). Although researchers continue to disentangle the effects of culture and context on parenting and child development (Calzada, Huang, Anicama, Fernandez, & Brotman, 2012; Greenfield & Suzuki, 1998; Huang, Calzada, Cheng, & Brotman, 2012a; Huang, Cheng, et al., 2012; Lawire, 2009), the basic principles underlying effective parenting practices are considered cross-culturally robust (Bradley & Corwyn, 2005; Lansford & Dodge, 2008). It is clear that positive behavior supports, effective behavior management and parent involvement in education play a critically important role in the healthy development of all children, regardless of cultural or ethnic background.

Consistent with the NPS and the Social Determinants of Health perspectives, *ParentCorps* focuses on *changing multiple social determinants* (e.g., improving quality of home and classroom environments), *building community capacity* (e.g., supporting and building early childhood teachers' skills to managing classroom behavior, supporting teachers to engage families), *targeting high-risk subpopulations* (e.g., children in disadvantaged neighborhoods) and developing partnerships with organizations to increase access to prevention services in community settings. Specifically, *ParentCorps* targets home and school determinants by including: 1) a group-based *Family Program* for young children and their parents, co-led by teachers and mental health professionals (14-session 2-hour concurrent group series for parents and children); and 2) *Professional Development* for early

childhood teachers. *Parent Groups* aim to promote a set of effective parenting strategies: structuring daily routines; positive parent-child interactions; sharing books; positive reinforcement; proactive strategies; selectively ignoring misbehavior; limit setting; helping children manage emotions; and parent self-care. Families of all early childhood students, including the extended family members, and caregivers outside the home, are invited to participate. Initial sessions include opportunities for sharing about parents' cultures and discussion about the influence of culture on parenting and child development. In this context, parents set goals for their children, which are then shared with other group members and child group leaders. Sessions follow a consistent structure and approach to behavior change, including introduction of topics through a *ParentCorps* video, evocative questions about the influence of culture, experiential activities, discussion about parents' readiness to try a new skill, and group problem-solving to address potential barriers to change. *Child Groups* aim to promote children's social-emotional skills (e.g., making friends, sharing, paying attention, dealing with feelings) and prevent behavior problems through a consistent structure (e.g., lesson with puppets, play, activity), positive behavior support and behavior management. At the end of each group, leaders provide positive feedback to parents about children's progress toward individualized goals, grounded in ongoing observations of the child's strengths and challenges. Periodic parent-child activities provide an opportunity for positive interactions and practicing of new skills. *Professional Development* for teachers aims to strengthen school mental health resource by promoting teachers' skills in positive behaviors supports and effective behavior management in the classroom and effective engagement of families. *Professional Development* is provided to large groups of teachers (3 days) and individual consultation in the classroom facilitates adoption and tailoring of strategies. Teachers who choose to co-lead the *Child Groups* as part of the *Family Program* receive additional training and coaching. Teachers' participation in the delivery of the *Family Program* is intended to strengthen parent-teacher communication and facilitate adoption of consistent strategies at home and school, with a shared commitment to supporting children's success (Brotman et al., 2011; Brotman et al., 2013; NREPP, 2012).

To increase access to care in community settings and to address the needs of ethnic minority children, *ParentCorps* was provided as a universal intervention program (e.g., for all families within a high-risk environment), embedded in early childhood programs as part of the normative early childhood experience. This approach is intended to minimize logistical barriers to participation, reduces stigma related to mental health services and creates a mechanism to reach the majority of the targeted population. The delivery model and the messaging about the program encourages the development of a "parent corps" of knowledgeable and empowered parents who are equipped and supported to help other parents in the community to navigate the everyday challenges of raising young children. Furthermore, timing the intervention with the key transition to school for both children and parents, and framing the intervention around the promotion of school success is likely to increase acceptability and capitalize on the motivation of parents from diverse cultures to help children achieve.

## Evidentiary Foundation

*ParentCorps* has been evaluated in two cluster (school) randomized controlled trials with English-speaking children in public pre-kindergarten programs in disadvantaged urban neighborhoods in New York City (NYC). These trials included 18 schools, more than 100 ethnically diverse early childhood school personnel (including teachers, mental health professionals and paraprofessionals) and more than 1,200 ethnically diverse minority children. More than half of the families in these two trials were immigrants (primarily AfroCaribbean and Latino) and a small sample in the first trial (12%) was ASA. Together, these studies provide strong evidence that *ParentCorps* results in more supportive and nurturing home and early childhood classroom environments, higher achievement test scores, better teacher ratings of academic performance and, among the highest-risk children (i.e., those with low levels of self-regulation at school entry), lower rates of physical and mental health problems (obesity, sedentary behavior, conduct problems) (Brotman et al., 2011; Brotman et al., 2013; Brotman et al., 2012). In addition, in both trials, families of children at higher risk for mental health and school problems (based on child, family and neighborhood characteristics) participated in the *Family Program* at rates comparable to families of children at lower risk. Although these studies were not designed to disaggregate components of intervention, findings from dose-response analyses are consistent with *ParentCorps*' emphasis on both parents/caregivers and teachers/schools as key agents of change. Independent review of the evidence for *ParentCorps* effectiveness with diverse families and readiness for dissemination can be found in the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-based Programs and Practices (NREPP, 2012).

## Dissemination of *ParentCorps* to ASA and Non-English Speaking Populations

To date, trials of *ParentCorps* have been conducted in NYC public school settings with pre-kindergarten programs and have included primary Black and Latino English-speaking families. Although one study included a small subsample of English-speaking ASA families (n=23), many questions remain about the acceptability and impact with ASA populations, especially feasibility of service delivery to non-English speaking families of children receiving early childhood education in CBOs (where ASA children are most likely to participate) (Calzada, Huang, & Brotman, 2012). Next, we describe our systematic efforts to prepare for *ParentCorps* dissemination and implementation in CBOs serving large numbers of ASA families using Mendel's Dissemination & Implementation framework (Mendel, Meredith, Schoenbaum, Sherbourne, & Wells, 2008). According to this framework, three stages must be considered in planning for program dissemination (distributing intervention information and materials to public health audiences) and implementation (using strategies to adopt and integrate evidence-based health interventions in practice settings). We describe the specific steps we have undertaken in three stages.

### Stage 1. Evaluate the context of dissemination

This stage requires identification of ASA communities' needs and challenges; understanding ASA families' attitudes, views and practices toward child development and mental health;

understanding child-serving agencies' structure, resources, and service processes; and evaluating whether program content and the implementation model fit the community and setting. Data collected during this stage are intended to better understand the context of ASA communities and to inform the dissemination and implementation actions in the second stage. We summarize relevant findings from a series of studies including analyses of available data (both local and national public data sets) and conducting small studies when data were not available.

**ASA Children's Mental Health Needs**—In three independent studies, we conducted parallel assessments of ASA, Black and Latino 4-year-old children in NYC (n =1,569, data collected between 2005 and 2009). Specifically, we considered mental health problems and social and emotional development in 221 ASA, 879 Black and 469 Latino children (Calzada, Huang, & Brotman, 2012). We also examined ASA children's health and development relative to children from other pan-ethnic groups, and within subgroups of ASA children, using a national data set—the Early Childhood Longitudinal Study-Kindergarten Class (ECLS-K) of 1998-1999 base-year data (NECS, 2001). We found consistent results across samples indicating that ASA children exhibit more internalizing problems and similar levels of externalizing problems relative to other pan-ethnic groups (Calzada, Huang, & Brotman, 2012; Huang, Calzada, et al., 2012b). In the NYC sample of ASA children, about one third had clinically-elevated anxiety symptoms and somatization problems based on parent report (Huang, Cheng, et al., 2012).

**ASA Parents' Service Seeking Practices**—We examined data from our NYC data set (n=221) and national data from the ECLS-K (NECS, 2001) to gain further understanding of parent service utilization practices and preferences related to child development and health. The NYC study indicated that 17% of ASA parents (of 4-year-olds) had participated in a parenting program. Parents of ASA young children tended to seek help and advice from their families (68%), friends (71%), pediatrician (72%) and children's teachers (66%), and were less likely to utilize formal mental health services when concerned about their child's behaviors (e.g., only 20% sought services when they had concerns about developmental problems). The ECLS-K study found similar service utilization patterns. Even though a high percent of ASA families had health insurance coverage (88-98%), only 20-33% reported seeking services when they had concerns about their child's development (Cheng, Moy, Bui, & Huang, 2009).

Service underutilization by ASA families may be explained by a lack of services in the community; we conducted a mapping study in NYC to understand what services were available for ASA families. First, we used 2000 and 2010 US census data and a geographic information system (GIS) to locate neighborhoods in NYC that had a high density of ASA populations, as well as a high percentage of families living in poverty and with limited English proficiency. Next, within one targeted area with these characteristics, we conducted web-based searches to identify early childhood services (including community based pre-kindergarten programs, daycare, Head Start, early childhood mental health treatment facilities, inpatient/outpatient facilities, pediatric care, and other ASA community supports). In a specified geographic area in lower Manhattan (with > 40% ASA; > 50% poor), we

identified approximately 45 “center-based early childhood education or care service agencies” (including 2 public schools and 16 CBO child education/care programs). ASA families from this community were more likely to enroll their children in daycare, head start and pre-kindergarten programs housed in CBOs (serving about 900 children) than in public schools with pre-kindergarten programs (serving about 100 children) (Calzada, Huang, & Brotman, 2012). We concluded that to effectively serve low-income ASA families, we would need to disseminate *ParentCorps* in early childhood education/care programs within CBOs.

**Acceptability and Fit of ParentCorps for ASA Families**—We carried out two studies with ASA families of young children to examine the acceptability and fit of *ParentCorps*. First, we evaluated available data on participation and satisfaction with the *ParentCorps Family Program*. In the first trial of *ParentCorps* ( $n = 171$ ), where schools were assigned to intervention (*ParentCorps*) or control (education as usual) conditions (Brotman et al., 2011), there were 23 English-speaking ASA families from South and East Asian countries enrolled in the study. All but one of these families came from one school and therefore all were assigned to the same condition (intervention). Although this precludes examination of impact on ASA from control schools versus intervention schools (as conducted for Black and Latino families; Brotman et al., 2011), we are able to examine the level of participation in the intervention for 22 ASA families. Of the 22 ASA families in intervention schools, 80% participated in the *Family Program* and 69% attended more than half of the group sessions. Weekly satisfaction questionnaires completed by ASA families were high (4.66 - 4.81 on a 5-point scale). Importantly, family engagement and satisfaction was comparable to rates observed for the full ethnically diverse sample, and suggest that *ParentCorps* is attractive and useful for English-speaking ASA families of children enrolled in pre-kindergarten programs in school settings. Of note, these rates of participation are comparable or better than rates reported for other family-focused prevention programs (~70% participation and ~ 50% attending more than half of the sessions) (Haggerty et al., 2002; Heinrichs, Bertram, Kuschel, & Hahlweg, 2005; Nordstrom, Dumas, & Gitter, 2008; Reid, Webster-Stratton, & Beauchaine, 2001). This level of participation among ASA families is encouraging and may be attributed to school-based delivery during the transition to school, and to programmatic efforts towards cultural sensitivity.

To estimate the potential impact of *ParentCorps* with ASA families, we examined pre- to post-intervention change scores among the 22 ASA families in the intervention school (Brotman et al., 2011). Although analyses are not directly comparable to those reported for the subgroup of Black families and Latino families (which contrasted parenting and child behavior across condition), analyses of the change scores for ASA parents and children revealed positive and medium-size effects on effective parenting practices and child behavior (*Cohen's d* > .50), similar to the effects reported for Black and Latino families.

To complement the small intervention study, we conducted an assessment study with a much larger ASA sample ( $n = 221$ ) drawn from CBOs throughout NYC. This study inquired about ASA parents' interest in various parenting topics and found further support for the potential value of *ParentCorps* for ASA families. For example, a majority of ASA parents (72%) expressed interest in participating in a parenting program focused on parent-child



relationships (59%), child development (54%), managing child behavior (69%), and parenting practices in diverse cultures (41%), all of which are part of *ParentCorps*' content.

Finally, to further consider the theory of change of *ParentCorps* as applicable to ASA families from a social determinants framework, we considered risk and protective factors impacting child development outcomes among ASA children. From the ECLS-K data, we found support that demographic, home (e.g., stimulating home environment) and service determinants (e.g., utilization of social and health services) partially explained physical and mental health problems in young ASA children (Huang, Calzada, et al., 2012b). In the NYC sample, we found support for a mediational model in which parents' acculturation influenced parenting, which in turn influenced child mental health outcomes (SEM:  $\chi^2 = 102.02$ ,  $p = .01$ , CFI = 0.94, RMSEA=.06). Parents who did not feel connected to US American culture were more likely to experience parenting stress, have a conflicted parent-child relationship and discourage their child's emotional expression. These parenting practices were associated with more externalizing and internalizing problems, and fewer adaptive behaviors in ASA children (Huang, Calzada, et al., 2012a; Huang, Cheng, et al., 2012). These findings suggest that ASA families may benefit from *ParentCorps*, which gives parents access to the latest evidence on parenting so that they may consider adopting new practices. Importantly, the *ParentCorps* approach encourages parents to reflect on relevant scientific findings in the context of their own belief systems, values and everyday realities. Through the group process, parents and group facilitators collaborate to come up with individualized strategies that are based on evidence and adopted to each family's circumstances. For example, a parent may choose to encourage their child's emotional expression as a means of promoting emotion regulation skills, but only in the privacy of their home because doing so in public is culturally unacceptable.

In summary, Stage 1 studies of context for dissemination highlighted the following: 1) young ASA children have unmet mental health needs, especially, but not exclusively, related to internalizing problems; 2) ASA parents are interested in parenting programs; 3) ASA parents are more likely to enroll their young children in early education/care programs in CBO settings rather than public elementary schools with pre-kindergarten programs; 4) *ParentCorps* appears to be engaging and relevant to ASA English-speaking families; and 5) consistent with the cross-cultural literature, parenting practices are meaningfully related to child outcomes in diverse ASA families. Findings from Stage 1 studies informed Stage 2, which involved feasibility testing of *ParentCorps* within CBOs with early childhood programs serving large numbers of low-income and non-English speaking ASA families.

## **Stage 2. Carry out actions for dissemination in community-based organizations (CBOs)**

This stage includes program adaption, building human resource capacity in communities for program implementation, implementing an evidence-based program, and sustaining the program. In the dissemination of *ParentCorps*, relevant steps included: 1) program adoption to address setting differences rather than program content given findings from Stage 1; 2) human resource capacity building for program implementation (e.g., training bilingual staff to implement the program); and 3) strategies for program sustainability in targeted communities (e.g., integrate program into standard CBO policies and practices).

**CBO Contexts: Communities Served, Services and Staffing**—Upon hearing of successful implementation of *ParentCorps* in NYC schools, directors of two large CBOs in NYC that serve large numbers of low-income ASA children and families approached *ParentCorps* developers. We undertook a series of discussions and site visits to better understand the CBO's service structure, procedures, resources, organizational culture and values, especially concerning families of young children. The two CBOs (one based in Queens and one based in Manhattan) have 49 sites in high-need neighborhoods across NYC; approximately half of the families served are poor and foreign-born. More than two-thirds of the families served by these agencies are ethnic minority including one-third ASA (22% Asian language speaking). Both organizations offer a broad range of social, mental health and educational services to families, including early childhood education (Head Start), daycare, individual and family intervention (counseling, outreach), child abuse prevention (parent education) and youth development programs. The CBO structure includes mental health and other professionals and paraprofessionals, with large numbers of ethnically- and racially-matched, bilingual staff.

**Feasibility Studies**—In both CBOs, *ParentCorps Professional Development* was provided to staff and a subset were identified and trained to facilitate the *ParentCorps Family Program*. As of this writing, 70 staff participated in *Professional Development* and 54 were trained to facilitate either *Parent Groups* or *Child Groups*. In one site, six cycles of the 14-session *Family Program* were implemented. In the second site, four cycles of the *Family Program* are planned for this year. In both sites, *Family Program* participants are ASA, Latino, and Black; *Parent Groups* are offered in English, Spanish, Mandarin and Bengali.

In general, *Professional Development* and training for the *Family Program* followed similar procedures to our school-based efforts (Brotman et al., 2008). The primary difference in the CBOs is that the majority of staff available to facilitate the *Parent Groups* are paraprofessionals and not mental health professionals. Whether or not paraprofessionals can be trained to implement the *Family Program* with fidelity and achieve parent and child outcomes benchmarked to the trials is a critical question that will be the subject of future studies. Experiences in both CBOs indicate that program directors are very enthusiastic about the professional development and training of their professional and paraprofessional staff, recognizing the uniqueness and value of culturally-informed professional development. Paraprofessional staff as well as professional staff appeared motivated to participate in the *ParentCorps Family Program* and enjoyed and appreciated the highly interactive, thought-provoking and culturally-informed *Professional Development*.

We consider attendance and satisfaction data from participants in the first two cycles of the *Family Program* in one site to further evaluate program feasibility. Of the 30 families who participated in these cycles, 45% were ASA. Because data were collected anonymously, data could not be considered separately for ASA families. The average number of sessions (of 14) attended was 7.03 (SD=4.35), with 63% of families attending 5 or more sessions. Parents were asked to provide *Weekly Group Satisfaction* (7 items,  $\alpha = .98$ ) ratings on a 7-point scale (7 = highly satisfied) regarding satisfaction toward leaders and program content and intent to use the skills discussed. A total average score was created across the 14

sessions. Parents also completed a more comprehensive *Satisfaction Questionnaire* (also on a 7-point scale) after the final group session to provide feedback on the cultural appropriateness of the group content (2 items,  $\alpha = .77$ ), perceived group leader competency (5 items,  $\alpha = .93$ ) and the usefulness of materials (e.g., video, guides; 2 items,  $\alpha = .99$ ). All measures were collected anonymously. Parents were highly *satisfied with group leaders* (e.g., “did a good job explaining topic”, “made group members feel comfortable”),  $M (SD) = 6.29 (1.65)$ ; *program content* (e.g., “useful and enjoyable”),  $M (SD) = 6.21 (1.67)$ ; and *homework assignments* (e.g., “felt useful”),  $M (SD) = 5.77 (1.80)$ . Most parents *planned to use the skills discussed*,  $M (SD) = 6.16 (1.70)$ . Parents also felt *group leaders were competent* (e.g., “knowledgeable, properly answering questions, stimulating interest, respecting parents”),  $M (SD) = 6.69 (0.47)$  and felt that the *program was culturally appropriate* (e.g., “felt groups were developed by people from [my] culture”),  $M (SD) = 5.77 (1.56)$ . These ratings appear to be comparable to parents’ ratings of *Parent Groups* facilitated by highly trained mental health professionals in the two school-based trials.

### Stage 3. Evaluate program outcomes and impacts

This stage evaluates the impact of program implementation on targeted populations. Outcomes considered under this framework include health and developmental outcomes of the targeted population (e.g., children's mental health) and outcomes at the level of the CBO and community (e.g., agency policy changes, climate, resources). Studies of *ParentCorps* implementation fidelity, parent and child outcomes and systems-level adoption and other system-level outcomes (e.g., service satisfaction, organizational policy change) in the two CBOs are ongoing. We are also planning dissemination and implementation studies with ASA populations which will allow us to draw conclusions about effectiveness with ASA families in diverse community based settings.

## DISCUSSION

This paper addresses a major gap in ASA prevention research by applying public health and dissemination and implementation frameworks, and by proposing an approach to integrate these frameworks to mental health promotion efforts with young ASA children. A case study was used to illustrate how a program can be designed to target relevant social determinants of health, and how an evidence-based intervention can be disseminated and evaluated in new settings to reach targeted ASA populations. Results from one RCT suggest that implementation of *ParentCorps* by mental health professionals and teachers in public school settings is a promising strategy for reaching English-speaking ASA families with children enrolled in school-based early childhood programs. *ParentCorps* also appears to be a viable approach for reaching non-English speaking ASA families who receive early childhood services in CBO settings. Future work will focus on evaluating the impact of *ParentCorps* implementation strategies with CBO staff as well as with ASA families served in diverse early childhood settings.

More generally, this paper illustrates a population-level approach to prevention. We show how multi-level strategies can be utilized to strengthen family and community capacity to support ASA and ethnic minority children's healthy development. Based on qualitative and

quantitative studies of families, agencies and neighborhoods, we focused on building capacity for mental health promotion in a CBO setting, where a large portion of the ASA population receives early childhood services. The characteristics of staff in these settings present opportunities and challenges to implementation of evidence-based programs. The fact that many of the staff in CBOs are culturally and linguistically matched to the families served eliminates a number of logistical barriers to service provision. On the other hand, most CBO-based early childhood programs are staffed by paraprofessionals and not full-time mental health professionals. Feasibility studies in two large CBOs suggest that administrators and paraprofessional staff are motivated to implement an evidence-based culturally-informed family-focused program and are highly satisfied with an interactive and experiential approach to professional development. ASA families responded very well to implementation by trained paraprofessionals. It remains to be seen whether or not paraprofessionals can implement the program with fidelity and achieve meaningful outcomes for ASA parents and children. Careful consideration and collaborative decision making is required prior to implementation in different communities and service systems. Each community and service system has a unique set of resources, preferences, and challenges that need to be thoughtfully considered prior to adopting *ParentCorps* or other evidence-based programs.

We have attempted to simultaneously consider critical issues in prevention science and dissemination and implementation science. By taking advantage of existing data from our trials with ethnically diverse low-income families and national and local datasets, and combining this with newly collected data from qualitative and feasibility studies, we hope to hasten the translational cycle. At the same time, we recognize the complexities and challenges in reaching our ultimate goal of population-level impact for ethnic minority, low-income families. We recommend meaningful multidisciplinary collaboration among researchers, families, community members, mental health professionals and policy makers at all stages of program development and evaluation. We will continue to take this approach in our planned studies including studies of organizational and contextual factors that contribute to effectiveness of implementation; studies of various approaches to support CBOs for high-quality implementation; and studies of child and family outcomes with diverse populations in various early childhood service settings (including outside of NYC). Ultimately, such a research program has great potential to address the mental health needs and disparities of ASA and other ethnic minority children.

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