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*Twelve-Year Professional Youth Mentoring Program for High Risk Youth:*

*Continuation of a Longitudinal Randomized Controlled Trial*

Office of Juvenile Justice and Delinquency Prevention

Grant No. 2013-JU-FX0007

Final Report

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*Twelve-Year Professional Youth Mentoring Program for High Risk Youth:  
Continuation of a Longitudinal Randomized Controlled Trial*

Abstract

This study investigated impacts of a professional mentoring program, Friends of the Children (FOTC), during the first 5 years of a 12 year program. Participants ( $N = 278$ ) were early elementary school aged boys and girls who were identified as “high risk” for adjustment problems during adolescence and emerging adulthood, including antisocial behavior and delinquency, through an intensive collaborative school-based process. Participants were randomly assigned to FOTC or a referral only control condition. Mentors were hired to work full time with small caseloads of children and were provided initial and ongoing training, supervision, and support. The program was delivered through established non-profit organizations operating in four major U.S. urban areas within neighborhoods dealing with various levels of challenges, including relatively high rates of unemployment and crime. Recruitment into the study took place across a three year period, and follow-up assessments have been conducted every six months. Data have been collected not only from children, but also from their primary caregivers, their mentors, their teachers, and their schools (i.e., official school records). Strong levels of participation in study assessments have been maintained over the past 8 years. Most children assigned to the FOTC Intervention condition received a mentor, and at the end of the study, over 70% still had mentors. While few differences were found between the FOTC and control conditions for the first several years of the study, two key differences, in child “externalizing” behaviors and child strengths, emerged at the most recent assessment point, which on average was after 5 years of consistent mentoring. To date, outcomes do not appear related to the amount of mentor-child contact time or the quality of the mentor-child relationship. Analyses are ongoing, and additional funding is being sought to continue the study forward.

*Twelve-Year Professional Youth Mentoring Program for High Risk Youth:*

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**Overview and Objectives**

The Child Study ( $N = 278$ ) is an ongoing, multisite, longitudinal randomized controlled trial (RCT) contrasting outcomes for children assigned to the Friends of the Children (FOTC) intervention versus a referral only control. FOTC is a theoretically and empirically-based long-term (i.e., 12 year, from kindergarten to high school graduation) mentoring program for children considered “high risk” for conduct disorder and delinquency, academic failure and high school dropout, and early sexual behavior and teen parenthood. In the trial, the program is being delivered by established, independent, non-profit FOTC chapters located in four U.S. inner city urban areas (hereafter referred to as "sites"). Thus, the RCT is neither an efficacy nor an effectiveness trial, but rather a rigorous examination of outcomes due to an ongoing, existing program delivered under in the real world under service-as-usual conditions, a research design our team often refers to as "reality-based research". Children eligible for the program are identified through intensive school-based screenings conducted by the chapters in concert with local public schools in kindergarten or first grade classrooms. Mentors are full-time employees who have small caseloads and who receive training and supervision to help children reach developmentally appropriate short and long-term goals. The primary aim of the overall study is to investigate whether FOTC positively impacts the behavior, the well-being, and the key interpersonal relationships of children throughout the program and beyond. Secondary aims include investigating whether the quality of the mentor-child relationship predicted program persistence, satisfaction, and engagement, as well as changes in the behavior, well-being, and the quality of the other interpersonal relationships of children; investigating whether program effects

vary by race/ethnicity, child gender, and baseline risk status and problem behaviors; and investigating the cost-effectiveness and cost-benefit of the program.

For the past year, the study has been funded by the Office of Juvenile Justice and Delinquency Prevention (OJJDP). During this funding period, the project has focused on the following goals: (1) To investigate whether a theoretically and empirically based long-term youth mentoring program for high risk children positively impacts the behavior and well-being of children across the first four years of the program; (2) To investigate whether the quality of the mentor-child relationship, as measured both by independent observers and mentor, child, and parent/caregiver perceptions, is related to program persistence, satisfaction, and engagement, as well as the behavior and well-being of children across the first four years of the program; (3) To explore differential effectiveness of the FOTC program on the behavior and well-being of children by ethnicity, child gender, and baseline risk status and levels of problem behaviors; and (4) To investigate the cost-effectiveness and cost-benefit of the FOTC program across the first four years of the program.

## **Background**

Adult support and guidance are cornerstones of healthy youth development (Reid, Patterson, & Snyder, 2002). Ideally, parents are the primary providers of this support, but many youth lack the full amount of parental support and guidance they need to successfully navigate childhood and adolescence. For these youth, the involvement of adults from outside of the family may be critical in fostering optimal emotional, cognitive and physical development. Researchers have noted that youth who come from disadvantaged backgrounds yet succeed often are those who are able to connect with “natural mentor” adults, who, in addition to or instead of their parents, provide them with support and guidance (Werner, 1986; Werner & Smith, 1992;

Rhodes, Gingiss, & Smith, 1994; McLearn, Colasanto, & Schoen, 1998). However, in recent times, it appears that many children in impoverished, distressed communities are less likely to have access to such adults and/or do not have the social skills to connect with them (Scales, 2003).

Ideas such as these are behind the recent proliferation of numerous mentoring programs throughout the U.S. (Rhodes, 2005). Over the past several decades, mentoring has been one of the most high profile youth preventive interventions in the country. There is simply no other mode of intervention that is broadcast as “vital” on a more frequent basis (DuBois & Karcher, 2005). Policymakers have been particularly interested in mentoring. During the years preceding the funding of the study of interest in this report, 15 cities and 20 states launched mentoring initiatives (MENTOR/National Mentoring Partnership, 2004a). At the federal level, President George W. Bush directed national attention to mentoring on repeated occasions. Most notably, support for mentoring programs was a part of the No Child Left Behind Act of 2001 (U.S. General Accounting Office, 2004). Subsequently, in his 2003 State of the Union address, Bush proposed spending \$450 million to support mentoring (MENTOR/National Mentoring Partnership, 2004b). In the following year, \$50 million was allocated to the Department of Health and Human Services to support programs targeting the children of incarcerated parents, and \$50 million was allocated to the Department of Education to support school-based programs. During this same period, Ad Council commercials encouraging adults to become mentors were broadcast multiple times each day on televisions around the country. Numerous films portraying mentoring were produced by Hollywood studios, with characters such as the mentor basketball coach (e.g., *Coach Carter*), the mentor high school teacher (e.g., *Stand and Deliver*), the mentor music teacher (e.g., *Music of the Heart*), and the “natural” mentor neighbor (e.g., *Finding*

*Forrester*), portrayed as making “the” difference in the lives of youth (and most often minority youth) growing up in difficult “high risk” circumstances.

Interest in mentoring in the U.S. is certainly not new. Formal mentoring programs started a century ago with efforts such as “friendly visiting” campaigns, in which middle-class women visited poor children to improve their knowledge of “proper morals”, and “big brothers” provided male role models to fatherless boys in U.S. cities (Baker & MaGuire, 2005). Research on the impacts of mentoring eventually followed. The most well-known investigation on child outcomes due to these early programs was the Cambridge-Somerville (Massachusetts) Study, where “at risk” elementary school age boys (up to 12 years old) were randomly assigned either to receive mentoring from paid, college-educated counselors (many with training in social work) or to a no intervention control condition (e.g., McCord, 1992). Boys were visited by their mentors an average of two times a month for five years. No initial impact was found due to the program (Powers & Witmer, 1951) and subsequent long term follow-ups found either no impact (McCord & McCord, 1959) or negative impacts on participants in the mentoring group (McCord, 1978; McCord, 1981; Baker & MaGuire, 2005). To date, this study remains the only mentoring study to examine outcomes related to any type of mentoring program across several decades, and the only relatively large scale study of paid mentoring that occurred over a lengthy period of time.

More recent research efforts have found positive benefits for children receiving mentoring, at least in the short term. Similar to the early work, children in these studies tend to come from disadvantaged backgrounds and/or neighborhoods. Most studies have focused on volunteer mentoring. Most notably, the Big Brothers Big Sisters (BBSS) study (Tierney & Grossman, 1995; Rhodes, Reddy, Grossman, & Lee, 2002) involved randomly assigning approximately 1,000 10 to 16 year old participants to BBBS or to a waitlist control group.

Eighteen months after randomization, compared to control youth, BBBS assigned youth were 46% less likely to start using drugs, 27% less likely to start using alcohol, 33% less likely to hit someone, and 52% less likely to skip a day of school. BBBS youth also reported better parental and peer relationships, reported feeling more confident about how they would perform in school, and earned higher grades. Thus far, this trial is the most scientifically rigorous, contemporary study of mentoring. As a result, BBBS is the only mentoring program that has appeared on prominent federally funded “best practices” lists for preventive intervention with children and youth, such as the original “Blueprints for Violence Prevention” list developed under the direction of Dr. Delbert Elliott at the University of Colorado.

A variety of studies on mentoring outcomes have found that programs can benefit children in multiple areas, including improved academic performance and attitudes, decreased deviant behaviors, and improved psychosocial outcomes. In terms of academic success, several mentoring programs have been shown to improve school attendance, attitudes toward school, and grades, as well as to increase the chance that disadvantaged high school students will pursue higher education (e.g., Johnson, 1999; Grossman & Tierney, 1998; LoSciuto, Rajala, Townsend, & Taylor, 1996; Cave & Quint, 1990). In terms of deviant behaviors, several mentoring programs have been shown to decrease substance use (e.g., Aseltine, Dupre, & Lamlein, 2000; Grossman & Garry, 1997; LoSciuto et al., 1996; Ringwalt, Graham, Paschall, Flewelling, & Browne, 1996; McPartland & Nettles, 1991; Davidson & Redner, 1988) as well as to decrease rates of physical fighting (Grossman & Tierney, 1998) and other signs of conduct disorder (Davidson & Redner, 1988). Importantly, several evaluations of mentoring programs also have found that mentored youth often experience improvement in their relationships with peers and adults, and develop more “pro-social” attitudes about life and the future (e.g. Grossman &



Tierney; 1998, LoSciuto et al., 1996; Davidson & Redner, 1988). Again, however, most of these studies examine short term impacts, rather than long term outcomes.

An area where few studies have been conducted is on the processes within mentoring programs that mediate positive outcomes for youth. In the most scientifically rigorous study on this topic, Rhodes, Grossman and Resch (2000) found that the effects of mentoring are mediated partially through improvements in adolescent perceptions of their parental relationships. Other studies have shown that such perceptions are strongly related to a lower likelihood of the risky behavior of “wandering” (spending time unsupervised by adults outside of the home; Forgatch & DeGarmo, 1999), which is related to a variety of youth problem behaviors (Stoolmiller, 1994). Mentoring was associated with improvements in scholastic competence and school attendance suggesting that mentors can directly influence children’s cognitive and behavioral functioning through role modeling, tutoring, and encouragement. The impact of mentoring on self-worth, school value, and grades was mediated through its positive impact both on the parent-child relationship and scholastic competence. These findings suggest that guidance and support from an adult outside of the home are associated with improvements both in the quality of the parent-child relationship in general as well as in the quality of specific parent behaviors, such as monitoring and supervision (e.g., Kerr & Stattin, 2000).

More broadly, the organizational practices and infrastructures of mentoring programs have been found to influence child outcomes. In a review of the major implementation studies on mentoring, Sipe (1999) found that standardized procedures in screening, orientation, training, matching practices, match supervision and support, and regular meeting time varied dramatically from program to program. After examining which programs were most able to foster lasting mentoring relationships, Sipe concluded that screening, training and support practices were the

most critical. DuBois Holloway, Valentine, and Cooper (2002) conducted a meta-analysis of results from 59 independent studies of 55 mentoring programs. They examined not only the link between program practices and the longevity of a mentor-mentee relationship, but also between program practices and program effectiveness. Importantly, they found that no single practice accounted for program effectiveness. However, they also found that programs with a stronger infrastructure that supported the employment of “best practices” tended to have a stronger, positive impact on both characteristics of the mentoring relationship and child outcomes. In short, programs that included ongoing training for mentors, structured activities for the mentor-child pairs, a mechanism for support and involvement of the parents, and tight monitoring of program implementation had stronger effects. In support of these conclusions, there is general agreement in the mentoring literature at large that these practices lend themselves to perceived higher quality relationships between mentors and mentees (Karcher, Nakkula, & Harris, 2005).

Positive research findings on outcomes due to mentoring have led many to consider targeting mentoring programs toward children thought to be at “high risk” for the development of adjustment and behavior problems, such as foster children and the children of incarcerated parents (e.g. Rhodes, Haight, & Briggs, 1999). In this regard, DuBois et al. (2002) found that mentoring programs that served children in more disadvantaged circumstances had larger effect sizes than those serving less disadvantaged children. In particular, children who experienced both environmental and individual risk factors were the most strongly impacted by mentoring, with average effect sizes of 0.25 for highly disadvantaged children versus 0.14 for “non” disadvantaged youth. Thus, while relatively few studies have been conducted on mentoring programs that target only “high risk” children and adolescents (Mecartney, Styles, & Morrow, 1994; Greim, 1992; Jackson, 2002), there is suggestive evidence that mentoring may hold some

promise in working with this population. Such findings compliment findings from other recent prevention studies that have found that even universal prevention programs can have significant and lasting impacts on high risk youth (e.g., Reid, Eddy, Fetrow, & Stoolmiller, 1999; Stoolmiller, Eddy, & Reid, 2000; Eddy, Reid, Stoolmiller, & Fetrow, 2003).

DuBois and his colleagues also examined how effect sizes varied by other child characteristics as well as by mentor characteristics. Most of the evaluations in the DuBois analysis were conducted with adolescents. The youth tended to be from disadvantaged backgrounds but were not identified individually as youth that were at “high risk” for problematic outcomes. All the programs, with the exception of BBBS, offered some other services, including academic help, and the mentors were all volunteers. Further, in some programs, children had at least some interaction with an additional paid staff member, such as a school advocate. DuBois et al. (2002) found that the average effect size was slightly larger for programs that serve children of late childhood/early adolescent age (0.17) versus those of middle and late adolescent age (0.13). Programmatically, they found that mentoring-only programs seem to be just as effective as programs with additional services. However, this could be because only BBBS programs included only mentoring and BBBS agencies had much stronger infrastructures than other mentoring programs. Interesting, DuBois et al. found no differences in effects due to paid versus volunteer mentors, but few studies were available on this topic. However, mentors with backgrounds in the helping professions tended to be more influential mentors (effect size of 0.26 versus 0.09), and paid mentors may be more likely to have more such experience than volunteer mentors.

Taken together, the findings from the various recent studies on mentoring as well as the conclusions from the narrative and meta-analytic reviews of these studies indicate that the

effectiveness of mentoring *may* be maximized when (1) mentors have training or experience in the practices of the helping professions, (2) mentors are attached to well-run programs, and (3) the children targeted by the program are young and are at relatively high risk for the development of future problems. The FOTC program employs these practices. FOTC conducts intensive screenings in the kindergarten classrooms of public schools located in impoverished, inner city neighborhoods to identify children considered at particularly high-risk for the development of serious problem behaviors. FOTC starts serving children in the summer following kindergarten or first grade, a very young age compared to most other programs (see DuBois et al., 2002). FOTC mentors are not professional counselors or social workers, but many have had some training or background experiences in the helping professions. Once hired, mentors receive extensive training and supervision from skilled helping professionals for the purpose of increasing the quality of the relationships between the mentors and their mentees. The FOTC program provides services to children for a lengthy period of time, specifically the entire period of middle childhood and adolescence (i.e., first grade through twelfth grade).

It has yet to be investigated whether a program with the full set of characteristics of FOTC makes any difference. Of particular note is that to date, there are no studies of mentoring programs that begin in the transition to primary school, kindergarten or first grade, and continue until the end of secondary school, 12 years later. Most mentoring studies in DuBois et al. (2002) were of programs of less than 12 months in duration, and only 6 of the 59 studies had follow-up periods of more than 1 year. What makes FOTC of particular interest is that not only does the program meet what is considered the standard of practice in mentoring, but it also encompasses the best practices thought to maximize the effectiveness of mentoring. The program focuses on children living in impoverished, distressed inner city neighborhoods, many of whom happen to

be racial or ethnic minorities. Further, the program focuses on both boys and girls equally. Taken together, the practices of FOTC are congruent with two of the primary goals of the President's New Freedom Commission on Mental Health (2003): early mental health screening, assessment, and referral to services (Goal 4), and the elimination of disparities in mental health services (Goal 3) (see Huang et al., 2005).

### ***Developmental Model***

FOTC is intended to divert high-risk children away from a developmental path that leads to problematic life outcomes, and towards a path that leads to conventional successes, such as participation in organized activities like music or sports, academic achievement, and graduation from high school. The developmental model of child problem behaviors that underlies FOTC is consistent with the conceptual models that prevention researchers have most commonly used in recent years to describe the development of a variety of youth problem behaviors, including conduct problems, delinquency, academic failure, early substance use, and early sexual behavior (Dodge, 2000; Patterson, Reid, & Dishion, 1992; Reid & Eddy, 1997; Coie & Jacobs, 1993; Hawkins & Weis, 1985; Moffitt, 1993; Kellam & Rebok, 1992; Patterson, 1982). Moment to moment social interactions between the child and others, most notably those who interact with the child on a frequent basis, such as parents, teachers, daycare workers, siblings, and peers are at the center of the model. These proximal social interactions are hypothesized to be a potent force not only in exacerbating child problem behaviors once they have begun, but also in stopping them from occurring in the future, most notably through the shaping of a competing repertoire of positive behaviors (Reid et al., 2002).

The initiation of problem behaviors is hypothesized to be due to an interaction between the response tendencies of the child during early childhood and those of the other key people

(i.e., parents, caregivers) in the child's life. Early child difficulties arise when children are confronted by challenges, and when parents and other caregivers are unable to assist the child in adequately negotiating the prevailing environment. For example, if a child with a difficult temperament (e.g., fussy, irritable, emotionally liable, hyperactive, persistent) is born to depressed and irritable parents who live in extremely stressful circumstances, chances are that over time, parent-child interactions will inadvertently teach the child and the caregivers to become increasingly coercive (i.e., displaying negative behavior towards a person until that person backs down) in order to have their needs and desires met. Unfortunately, a tendency to behave in defiant, negative, and aggressive ways at home sets up a child to behave similarly in other settings. Upon school entry, high rates of these types of negative behavior by a child often lead to social rejection by teachers and peers. Further, these behaviors will likely continue at home and in other community settings, increasing the likelihood that parents and other adults also reject the child.

Such consequences put a child in a situation where the dominant modes of social interaction with conventional adults and peers become conflict and avoidance, which in turn decreases the number of opportunities the child has to be involved in prosocial situations where he or she can learn the nuances of getting along well with others. Social interactions influence the cognitive development of a child (Vygotsky, 1978), and the loss of contact with prosocial adults can have far reaching significance. Adults can provide children with frameworks or “scaffolding” upon which to acquire and refine new cognitive and problem solving skills (e.g. Rogoff, 1990). They also can provide children with social and cultural capital (Dubas & Snider, 1993), and help children to view their futures from different perspectives, seeing the various and wide ranging “possible selves” which they may become (Marcus & Nurius, 1986). The lack of

these types of experiences greatly reduces the possibilities for a child, and choices become limited. If this developmental trajectory is not thwarted, a number of significant and lasting consequences can occur. Despite how intelligent the child is, he or she may be failing academically because of his or her behavioral style and the responses from others that this style invokes. Teaching the child is difficult and unpleasant, and basic skills in reading, writing, and mathematics are not nurtured adequately. Most notably, children who are not reading well by the end of third grade are more likely than readers to suffer a variety of significant negative consequences during adolescence and emerging adulthood (National Reading Panel, 2000).

With decreasing access to normative situations, the central social influence in the child's life often becomes his or her delinquent or "deviant" peers (Reid et al., 2002), acquaintances who are having similar types of problems as the child. Surrounded by such peers, unsupervised by parents and other adults, and rejected by prosocial classmates and adults, the child is now in a situation conducive to learning new types of antisocial behaviors, and eventually begins to exhibit other behaviors that are problematic at young ages, such as substance use and sexual behavior. If these behaviors continue, interaction with the juvenile justice system is likely, as well as with a new set of troubled youth who travel within that system. Further, youth with more "externalizing" types of problem behaviors often exhibit internalizing problems such as depression and anxiety. This is because the social interactional processes related to externalizing problems, particularly within the family context, also appear to be intimately involved in children's development of internalizing problems (Kaslow, Deering, & Racusin, 1994). Failures and problems in one area of a child's life contribute to failures in other areas, and soon what began as a problem with oppositional defiant behavior, for example, may lead to academic failure, major depression, addiction, homelessness, and suicidal ideation.

This developmental model, often referred to as the “early starter” model and applicable to approximately 5 to 10% of the youth population (see Reid et al., 2002; Moffitt, 1993), describes the route that a significant number of the high risk children identified as appropriate for FOTC are likely to take without systematic and sustained intervention. Unfortunately, however, even if early intervention manages to successfully divert a child from such a path early on, the path may be rejoined later. Circumstances that significantly decrease parent/caregiver involvement with the child at any point, particularly when there is no other adult to fill the void in terms of supervision, monitoring, discipline, and positive reinforcement, can quickly result in a child re-entering the early starter path. This type of situation can quickly lead to poor outcomes for the child if the child also begins to develop friendships with delinquent peers. The FOTC program places a caring, trained, and supervised adult in the position to provide social support, referral, and presence should a child find him or herself in situations that commonly lead to the early starter path.

### ***Intervention Model***

The primary mechanism of change in FOTC is hypothesized to be the ongoing relationship between the mentor and child (Rhodes, 2005). By design, FOTC engages children early in the developmental process described above – upon entry into kindergarten, which for most children in the U.S. is the first point of contact with a far-reaching public service system. Over time, the mentoring relationship is hypothesized to provide a child with social support as well as the opportunity to observe, learn and practice emotion regulation skills, which include traditional interpersonal problem solving skills (e.g., Taylor, Eddy, & Biglan, 1999). Secondly, it also opens up opportunities for a child that he or she otherwise might not have had, from concrete opportunities like access to academic assistance and health care, to more



abstract opportunities like the chance to participate in enriching experiences that enhance a child's ability to envision a positive future.

In the model, the establishment of a strong, close interpersonal connection between a mentor and child, as characterized by descriptors such as “mutuality”, “trust”, and “empathy”, is hypothesized to lead to positive gains for the child in three interconnected areas: social-emotional development, cognitive development, and identity development. In the social-emotional realm, by effectively communicating with a child, and providing him or her with caring and support, a mentor can provide a child with the opportunity to experience what positive relationships with adults are like, something which Olds, Kitzman, Cole, and Robinson (1997) refer to as a “corrective experience”. Mentors can also help children to learn to better express and manage their feelings through modeling and active teaching, a phenomena referred to as “emotion coaching” (e.g., Gottman, 2001). These types of experiences may lead a child to view themselves and others in different, more accurate ways. The mentor may become a “secure base” from which a child may explore the world (Bowlby, 1988).

Development in other areas, however, is also vital for future success. In the cognitive realm, a positive, ongoing relationship between mentor and child that is skillfully managed by the mentor is hypothesized to provide a child with the opportunity to learn a variety of cognitive problem solving skills. Opportunities to converse with a caring adult within a safe relationship provides a child the chance to express him or herself, to verbally investigate his or her thoughts and feelings, to hear a different perspective, and to receive guidance (DuBois, Neville, Parra, & Pugh-Lilly, 2002; Rhodes, 2002). In the identity realm, the support for exploration provided by the mentoring relationship, and the increased number of activities that a child participates in due to the existence of the relationship and the connection to the FOTC program per se, are

hypothesized to provide a child with multiple avenues to explore and shape his or her identity. A strong sense of identity grows from feelings of self-worth and confidence. Discovering individual talents and interests is one dimension of identity development. FOTC is a holistic, comprehensive program, actively involved in children's identity development. Mentors engage children in activities that foster and encourage individual interests and pursuits. The development of racial identity is another dimension of identity development. During the early years, children are aware of diversity and can comprehend racial differences by the time they are in the early grades. Through socialization experiences with mentors, children are exposed to, and encouraged to appreciate their own culture and the cultures of others. The development of a positive group identity is a third dimension of child identity development, and is particularly important when children are part of an undervalued group. The mentor is trained to support a child as he or she actively and consciously constructs his or her sense of self (Erikson, 1964; Waterman, 1982), rather than having that self be thrust upon him or her such as occurs with children caught in the negative trajectory of the developmental model described above.

Gains in social-emotional, cognitive, and identity development are hypothesized to lead to an increase in the likelihood of positive outcomes for the child during adolescence and emerging adulthood, such as academic achievement and involvement in prosocial activities, and a decrease in the likelihood of negative outcomes, such as conduct disorder, depression, anxiety, substance use, early sexual behavior, school dropout, and early parenthood. Key to the model, and congruent with our developmental model, are that gains in these three areas of development are also hypothesized to lead to improvements in the other social relationships a child has, not only with peers, but also with the "natural" mentors (e.g., Klaw, Fitzgerald, & Rhodes, 2003) in their lives, including parents, teachers, and other adults, such as relatives, youth group leaders,

and coaches. In turn, these relationships are hypothesized to further shape the social-emotional, cognitive, and identity development of a child towards an increased likelihood of positive outcomes and a decreased likelihood of negative outcomes.

## **Study Method**

### ***Historical Context***

The trial was launched just a few months before the beginning of the Great Recession<sup>1</sup>. During this economic downturn, which officially lasted from December 2007 to June 2009 but which continues to reverberate today, US housing-related assets fell and prices for oil and food rose. Multiple financial institutions failed, and the federal government responded with bailouts and fiscal stimulus packages, including the American Recovery and Reinvestment Act of 2009 (ARRA), which ultimately funded part of this study. The impact on low income children and families, who are the focus of this trial, and who were already struggling from the recession of the early 2000's, was significant. This was true not only in the area of employment (i.e., the unemployment rate rose to 10% at the peak of the recession), but also in terms of support for children and families. During the period of this study, funding from both the public and private sectors decreased for both the provision of social services, including financial aid, as well as for research on the impact of such services. Compounding these problems has been a lack of policymaker consensus, particularly at the federal level, on what should and should not be funded, which resulted in policies such as the “sequester”, which has significantly cut funding across the board for many government programs, including social service programs and research funding.

## *Design*

In each of four sites, children were identified as at “high risk” for adjustment problems through an established child selection procedure conducted jointly by mentors from the local FOTC chapter and staff from partner public schools in all kindergarten or first grade classes within participating schools. Identified children were randomized into either a FOTC “Intervention” condition or a referral only “Control” condition, with an original planned sample size of 256 children and 256 parents/caregivers. If parents/caregivers consented to participate in the study, in person baseline interviews were conducted. Participating children assigned to the Intervention condition were given a same sex FOTC mentor and parents/caregivers were provided referral information on other local youth programs. Participating children assigned to the Control condition received referral information only. Once Intervention children began to meet with their mentor, program records on mentor-child contact were collected via the internet on a monthly basis. Every six months following the baseline interview, parents were interviewed, either via the phone or in person. On a yearly basis, data were collected from official school records, teachers were invited to complete questionnaires, and children and mentors were interviewed separately (via phone, in person, or for mentors, over the internet) as well as invited to participate together in a videotaped problem solving task.

## *Sites*

The FOTC program was developed and refined in Portland, Oregon during the early to mid-1990’s, and since that time, a variety of independent non-profit FOTC chapters have been created in various rural and urban locations in the US, and most recently in the UK. For this study, established FOTC chapters located in inner city neighborhoods in four major urban areas in the U.S. participated, including Boston (Dorchester Heights), New York City (Harlem),

Portland (Northeast), and Seattle (King County). These service delivery chapters are linked through a national chapter, which provides technical assistance and training. For most of this study, the national chapter was located in Philadelphia. Several years ago, “National” relocated to Portland. The service delivery chapters partner with the schools in their local neighborhoods to identify children appropriate for the FOTC program. If children subsequently move away, each chapter continues to provide mentoring to children living within a specified distance from the office (e.g., a 30 mile radius from the home office).

### ***Child Selection, Randomization, and Recruitment***

Over a period of three years, within each of the four sites and on five separate occasions, a child selection team comprising FOTC mentors and school personnel conducted a multi-agent and multi-method evaluation of the risk and protective factors present for each child in all kindergarten or first grade classes within each participating school. The evaluation was conducted under the purview and with the oversight of each individual school district, and was done independently of the research team that conducted the trial. In two sites (both on the West coast), a passive consent process was used to inform parents prior to the start of the evaluation (i.e., the typical procedure prior to the current trial), and in two sites (both on the East coast) an active consent process was required. During the first stage of the evaluation, the identification team conducted four to six weeks of direct classroom observations. During this time, input was sought from teachers via questionnaire ratings and repeated informal interviews. Interviews also were conducted with school counselors, principals, and other relevant school personnel. At the completion of this stage, a composite score was computed from measures of individual child risk factors (e.g., aggressive behavior, poor school attendance, social withdrawal) and measures of other risk and protective factors in the developmental context of the child, with higher composite

scores indicating greater risk and lower protection for future problems. For a child to remain eligible and move on to the second stage, he or she needed to have a first stage score that exceeded 50% of the total possible score for same sex children in his or her school during the current selection process. In the second stage, Friends, teachers, and the principal met to review all the data collected, and to discuss each remaining child. The number, types, severity, and constellation of child and family risk factors for each child were considered, as well as whether and how much these risk factors were mitigated by the number, types, strength, and constellation of child and family protective factors. At this point in time, children who were suspected of having serious psychiatric disorders or of being developmentally disabled were referred to a mental health professional for additional evaluation. If a child was determined to have an IQ of less than 75, to require a more restrictive environment for the receipt of services than FOTC can provide, and/or if a child required more specialized services than FOTC can provide, the child was deemed ineligible for the FOTC program. At the conclusion of this stage, a variety of measures were completed on risk and protective factors and a composite score was created, with again higher scores indicating greater risk and lower protection for future problems. To be considered eligible for participation in FOTC and in the study, a child needed to have a second stage score that was in the top 50% of all same sex children who entered the second stage. Thus, within each school, the child selection procedure identified the top 25% of boys and the top 25% of girls in terms of high risk and low protection. Prior to randomization, and only once during each year of recruitment, each site had the option to remove from randomization one child who had a high second stage score and who was perceived as “absolutely needing” a mentor to the intervention condition. Such children and their participating parent/caregiver were invited to participate in the study but were not included in outcome analyses. Within each school, boys and

girls were then randomized to condition separately. Parents/caregivers of each child were then invited to participate in the study by school staff, and, if they gave verbal consent to be contacted, were called by the research team. If they continued to express interest, parents/caregivers were visited at home by the research team and given information about the study. If parents/caregivers formally consented to participate, an in-person baseline interview was conducted separately with one primary parent/caregiver and with the identified child.

### ***Conditions***

*Intervention.* Children assigned to the Intervention condition received a same sex FOTC mentor, and their parents/caregivers received referral information about other local youth programs (see full description below). The FOTC program has three long-term goals: school success, as evidenced by high school graduation or earning a GED and having a plan for the future; positive youth engagement, including avoiding involvement with the juvenile justice system; and pursuing a healthy and developmentally appropriate lifestyle, including avoiding early parenthood. Long term goals are achieved through meeting developmental milestones along the way. Milestones are specified in five areas: social/emotional development, school success, healthy habits, making good choices, and skills for the future. The program centers on the development of a strong mentor-child relationship, which is fostered through one-on-one activities as well as structured group activities with other mentors and children. Mentors are requested to spend four hours per week with each child they mentor, and to engage together in a wide variety of developmentally appropriate, skill building activities that are targeted towards meeting both general milestones as well as specific goals set with the child. An important aspect of the work of mentors is coaching children while they solve problems, whether that be in the moment during a group activity, or helping children think through next steps in resolving

difficulties with peers or at home. Mentors strive to nurture individual interests, such as reading, music, sports, and hobbies, and work to connect children with and participate jointly in community service activities. Mentors, program staff, and/or volunteers provide a menu of additional services to children on an as needed basis, such as academic tutoring. If other, more specialized services are needed to support a child and/or his or her family, such as psychological testing or counseling, outside referrals are made. Mentors maintain ongoing contact with parents/caregivers and teachers, and visit the child's neighborhood, home, and school regularly. Mentors are hired based on their experience and demonstrated talent in working with youth. Once hired, they are asked to make an initial 3 year commitment to the program, and they participate in a week long, intensive experiential training program which utilizes a team of experienced mentors and program directors as well as outside experts. Sessions during the week focus on wide variety of practice topics, including goal setting and intervention planning, strategies for working with families, cultural competence in service delivery, gender competence in service delivery, communicating and working with families, family advocacy, supporting learning and educational outcomes, stress management and burnout prevention for mentors, and safety for mentors and children. Once mentors start working with children out in the field, a multi-layered system is employed for monitoring, supporting and supervising mentors, including keeping records of all meetings with each child and periodic individual and team meetings with supervisors. Supervision on more serious clinical issues related to a child is provided on an as needed basis. Mentors are required to receive one hour of continuing education training per month. Ongoing training topics mirror and expand on issues from the initial training. FOTC has a national quality assurance program and monitors the compliance of a chapter with these standards on a periodic basis.



*Control.* Children assigned to Control condition were not assigned a FOTC mentor. However, their parents/caregivers received referral information about other local youth programs. Specifically, to assist children and parents/caregivers in accessing other resources besides FOTC, during the initial home visit, parents/caregivers were offered an easy-to-use, up-to-date list of resources in the local community designed to build the strengths of a child and address his or her weaknesses. The list was complete in the sense of covering all of the various appropriate resources for all children who will be approached during study recruitment, but it was not be specifically tailored to a given child. Parents/caregivers who agreed to participate in the study also were given a card with the contact phone number of a designated research staff member who, upon request, assisted families in contacting resources, as well as finding additional information on any other needed resources at any point during the study.

### *Sample*

There are three types of participants in the trial: children, parents/caregivers, and mentors. At the beginning of the trial, the primary sample comprised 281 children. To reach this sample size, 2056 children were evaluated across the four sites, and 516 were selected as appropriate for the FOTC program. Of these, 319 children had parents/caregivers who consented to be contacted and gave contact information; 21 parents/caregivers subsequently declined to participate, 17 parents/caregivers were unable to be contacted, and 281 parents/caregivers consented to participate with their child. Thus, 88% of parents/caregivers contacted agreed to participate in the study, with consent rates ranging from 84% to 93% across the four sites. Over the course of the study, 3 parents/caregivers withdrew themselves and their children from the study and asked that their data be destroyed, so the effective initial sample size was 278 children and 278 parents/caregivers.

At baseline before the intervention began, there were few differences between children and parents/caregivers in the intervention and control conditions. The average child was 6.5 years old. About half of children (53%) were girls, and most children were racial and/or ethnic minority, with 46% African American, 18% Latino, 18% multi-racial, and 14% White. Most parents/caregivers had similar race/ethnicity to their children. The average age of parents/caregivers was 35 years. Most were women (91%); 52% were single mothers; 42% had not graduated from high school, 8% dropped out of school in middle school, 5% had earned an undergraduate degree and 2% a graduate degree. About 30% of parents/caregivers had been arrested by police one or more times in their lifetimes, 25% reported being drunk or high at least once in the past month, 22% had spent time in jail or prison during adulthood, and 13% of parents/caregivers reported diagnosed mental health problems. Only 23% of children lived with both biological parents, and only 15% lived with parents/caregivers who were married. The typical household included four members, but there was wide variation in composition, from 1 child and 1 parent/caregiver to 10 children and 11 adults. About 40% of parents/caregivers were unemployed, 40% worked full time, and the remainder worked part-time or were self-employed; 82% of families earned \$50,000 (the U.S. median income) or less, and 42% earned less than \$20,000. About 92% of children received free or reduced cost school lunches. About 60% of families received some other form of food aid, either through the federal food stamp program or through the Women, Infants, and Children Program; many families received other forms of aid: 39% received medical assistance, 23% lived in public housing, 20% received welfare assistance, and 8% received unemployment benefits. Only 13% of families owned their own homes.

Mentors were invited to participate in the study when they were paired with a child in the intervention group, and their participation ended when they no longer had a study child. The

initial number of mentors participating in the study was 36. By two years following baseline, 67 mentors had participated (and to date, a total of 104 mentors have participated in the study). All mentors have agreed to participate in at least some aspect of the study. The average age of mentors was 30 years old. Less than half were White (40%), 29% were African American, 8% Latino, 8% multi-racial, 2% Asian American, and 12% other. About 63% of mentors were single, and 23% were married. Most had graduated from college (76%) and 16% had graduate degrees. In prior employment, about 70% had worked in some type of social service setting and/or with children. On average, mentors had previously worked with children for 6 years and at risk children for 4.5 years. By two years following baseline, the average mentor in the study had worked at FOTC for 36 months (range of 2 months to 15 years) and had worked with an average of 9 children (range of 2 to 25 children).

### ***Measures***

At each assessment, information was collected from parents, children, mentors, and/or teachers or via official school records in one or more of the following areas: child social-emotional, cognitive, and identity development, child-parent/caregiver relationship, child-peer relationships, child-other adult relationships, a wide variety of child and family risk factors, and for children in the intervention, the child-mentor relationship. Measures of these various constructs were created via items and previously developed scales from in house developed interviews as well as nationally standardized questionnaires, including those employed in the outcome analyses below: the Child Behavior Checklist (CBCL; Achenbach, 1992) completed by parents/caregivers and teachers, the Behavioral and Emotional Rating Scale II (BERS; Epstein, 2004) completed by parents/caregivers and teachers, and the Test of Nonverbal Intelligence (TONI; Brown, Sherbenou, & Johnsen, 1997), the Woodcock Johnson Tests of Achievement

III(Woodcock, McGrew, & Werder, 1994), and the Peabody Picture Vocabulary Test (Dunn & Dunn, 1997) completed by children. Variables of interest from official school records were absenteeism, tardiness, reports to parents, and suspensions. Participants were compensated for their time for completing assessments. During the first two years of follow-up, parents/caregivers received \$180 for participating in interviews; children received \$65 for participating in interviews, and for children in the intervention condition only, and additional \$40 for participating in videotaped observation tasks; mentors received \$25 for completing an initial demographic interview, \$20 for participating in a videotaped observation task with each child they mentored each year, and \$50 to complete an interview about each child they mentored each year; and teachers received \$20 for each set of questionnaires they completed about each child each year.

### **Results Prior to the Current Funding Year**

Prior to the current funding year, data were available on all participants up to two years following the initial, baseline assessment. The results from analyses of program processes and outcomes during the initial years that a child is matched with a FOTC mentor are summarized below.

#### ***Program Model***

Three of the four chapters maintained the standard FOTC program model (see description above) throughout the first two years of the study. However, due to both difficulties in procuring sufficient funding to support this model and a desire to provide services to more children, one chapter, Site 2 (note that details about study sites are referred to anonymously here and subsequently in this report), changed their service model not long after the trial began. Instead of paid mentors working with up to eight children each throughout 12 months of each year,

graduate student intern mentors (and specifically MSW students) work with one to two children each during the academic year. Groups of interns are supervised by “master” mentors who continued to have contact with children during the summer months. Each academic year, a child receives a new student mentor. In addition, from the beginning of the study, three chapters selected children during kindergarten, but the fourth (again, Site 2), selected children during first grade.

### ***Mentors***

For children assigned to the intervention condition, once parents/caregivers consented for a child to participate, it took an average of 62 days (median = 35 days;  $SD = 86$  days) for a child to begin meeting with his or her mentor. Most (70%) children met with their mentor within 8 weeks of entry into the trial. A few children ( $n = 10$ ) were either not assigned a mentor or never met with a mentor, and in most cases these situations occurred because FOTC mentors were unable to contact the family. By the end of the second year of follow-up, most (76%) children in the intervention group had worked with only one mentor. However, 25 children had worked with two mentors, and 9 had worked with three mentors. All of the children with three mentors were from the chapter who switched to a graduate student intern mentor model. For children with only one mentor, the average number of months the mentor and child met was 24. For a child who had two mentors, the average number of months a child met with the first mentor was 13, and with the second, 10. For a child who had three mentors, the average number of months the child met with the first mentor was 4.5, the second was 6, and the third was 5.

### ***Intervention Fidelity***

FOTC is a relationship driven program. Thus, key indices of fidelity are contact between mentor and child, and the support and supervision a mentor receives to do his or her work.

Across all sites during the first two years, in a typical month, the average child met five times with his or her mentor for a total of 12 hours, 8 hours of which were spent in one-on-one time. Across the first 2 years, the average child received approximately 302 total service hours and participated in an average of 116 mentor-child meetings. Most contact time was spent in milestone activities. The most common milestone addressed was social/emotional development (average of 5.2 hours), followed by school success (3.8 hours), health habits (1.5 hours), making good choices (1.3 hours), and skills for the future (0.7 hours). In addition, in a typical month, mentors met a total of 36 minutes with parents/caregivers. For 86% of children, their mentors met with their parents/caregivers at least once in person; about the same percentage had phone contact, and 52% had email contact. Mentors also met an average of 12 minutes per month with teachers; 63% visited teachers at school, 11% had email contact, and 6% had phone contact. Finally, in a typical month, 69% of mentors reported having one or more in person or phone contacts with their supervisor, averaging 30 minutes per month. About 54% reported participating in a group supervision meeting, for an average of 20 minutes. The average mentor talked with their supervisor twice in the past month about each child on their caseload. Finally, on average, 36% of mentors reporting attending continuing education training in a given month for an average of 1.7 hours. In yearly interviews, 57% of mentors reported participating in job training “often” or “very often”; 86% reported meeting in group supervision “often” or “very often”; and 80% reported meeting individual supervision “often” or “very often”. In all, 92% of mentors reported that they know what is expected of them at work, and 76% reported that they had the materials, equipment, and resources needed to do their jobs.

### ***Consumer Satisfaction***

At the two year follow-up assessment, 78% of intervention parents/caregivers reported that they had contact with their child's mentor at least weekly, and 82% described the program as "very helpful" for their child. Over 90% of parents/caregivers reported that they would "recommend" the program to others. Intervention children also reported a high level of satisfaction with their mentors. Over 92% of children working with a mentor reported that they trusted their mentor, that the mentor makes them feel better when upset, and that their mentor helps them solve their problems. All intervention children reported having fun with their mentor. These findings were quite similar to those at the one year follow-up assessment.

### ***Outcomes***

***Analytic Focus.*** Several outcomes were measured on three occasions across the two years of follow-up: child psychopathology through the parent-reported CBCL (combined across externalizing and internalizing subscales); child strengths through the parent-reported BERS (combined across subscales); child psychopathology through the teacher-reported CBCL (combined across externalizing and internalizing subscales); and child strengths through the teacher-reported BERS (combined across subscales). Several other outcomes were measured on two occasions: child academic achievement through the Woodcock Johnson; and Child TONI (Test of Nonverbal Intelligence). Finally, several outcomes were measured on only one occasion: child receptive vocabulary via the Peabody Picture Vocabulary Test, and school-reported absenteeism, tardiness, reports to parents, and suspensions via official school records. Total mentor-child contact hours were calculated from the monthly reports from mentors over the course of the two years. Mentor-child relationship quality was indexed through the child and mentor interviews completed during the second year of the trial, since by that point, some children already had different mentors than during the first year of the trial.

**Scoring.** For academic measures, standardized, published scoring methods were used. For the psychological and psychosocial measures, item-response-theory (IRT) methodology was employed to estimate individual scores. IRT utilizes all available data, avoiding the need for listwise deletion or imputation of missing item responses. IRT also produces individual score estimates and standard errors that quantify the uncertainty in the individual estimates. Together, the score and standard error define a distribution of scores for each individual. On psychological measures, 100 score estimates were drawn for each individual from their score distributions (these are known as “plausible values”) and 100 analyses were run. Coefficient estimates from these 100 analyses were combined using Rubin’s methodology for combining coefficient estimates in multiple imputation and plausible value analyses.

**Statistical Models.** In cases where two or three assessments were available of the same outcome, data were analyzed using multiple-group growth, or multilevel, models, using treatment status as the grouping variable. Missed assessments are inevitable in longitudinal studies, and a particular advantage to using a growth model is that the maximum likelihood estimator uses all available data to estimate the model. Three models were estimated for each outcome. The first model, which used only time as a covariate, assessed change over time. The second model added control variables, namely site and demographic characteristics (gender, race/ethnicity, age), as well as an index of child risk factors at each time point (as a time-varying covariate). The third model added a measure of frequency of mentor-child contact taken from the monthly reports provided by mentors. The dose effect was constrained to zero for the control group and estimated in the treatment group. The fourth model added a measure of the quality of mentor-child relationship. Several such measures were available from yearly interviews (i.e., from children, from mentors), and different models were run for each measurement agent. We



used sandwich estimators in all models to correct standard errors for the within-mentor clustering. Individuals in the control group were treated as one-person clusters

Of note is that the primary interest here is in two results from the growth models: differences in slopes between the treatment and control groups would suggest differences in progress over time; and, irrespective of any slope differences, evidence of mentor-child relationship quality and treatment dose effects. In most cases where two measurements were available from different times, data were also analyzed using regression models. As was the case for growth models, three regression models were run for each outcome. The first model included only treatment as a covariate. The coefficient for treatment was dummy coded. The second model added the site and demographic variables listed above. It also included the risk index at the first measurement occasion and the score on the same outcome at the previous measurement occasion. The coefficient for treatment (or difference in intercepts) showed the difference in scores between the control and treatment group, holding all other covariates, including the starting level, constant. Next, the effect of treatment hours was tested on the treatment group alone, and finally, effects of relationship quality reported by the child and the mentor were tested in separate models. There were a few outcomes for which there was only a single measurement. In this case, the regression approaches described above were also used, except without an initial, “baseline” level for the outcome. To control for starting levels in this case, a similar type of measure was used from a previous measurement occasion.

***Child Behavior, Psychopathology, and Strengths Outcomes.*** Both parent/caregiver-report and teacher-report measures of child psychopathology favored the control group, but neither difference was statistically significant. The difference in slopes in the parent-reported psychopathology was slightly greater than 1/5 of a standard deviation. The difference in slopes

as measured by teacher report was trivial. The strengths measures, as well family-relationship quality, also demonstrated trivial to nonexistent differences in change between the control and treatment groups. No differences between the groups were found in child strengths as assessed by parents/caregivers and teachers. No treatment dose effects were found, and no relations were found between outcomes and mentor-child relationship quality.

***Academic Outcomes.*** Among the results of the academic-test analyses, the TONI, the Peabody, and three of the six Woodcock Johnson subtests showed small differences that favored the treatment group, and the TOWRE and remaining three Woodcock Johnson subtests were ties. No differences were statistically significant. The Peabody showed a statistically significant, but very small, treatment dose effect in which each 10 hours of treatment resulted in an increase of approximately 1/5 of a point. It also suggested the possibility of differences between the means of the two groups of as much as a standard deviation once covariates and treatment hours were accounted for. However, the standard errors of the estimates were very large, and thus the difference was not statistically significant. No other treatment dose effects were found, and similar to the above findings, no relations were found between outcomes and mentor-child relationship quality.

### **Results from the Current Funding Year**

With funding from the OJJDP, data collection was finished for the third year follow-up and continued on follow-ups at several subsequent years. The results from analyses of program processes and outcomes during these years of the FOTC program are summarized below. Of note is that a variety of data analysis teams worked on these analyses, and approached them from several different directions. This includes co-investigators from the University of Memphis, the primary study methodologist from Partners for Our Children, and a methodology team from the

Oregon Research Institute. Each methodologist or team brought a different set of expertise to the table and together, and working closely with the principal investigator, this multiple team approach ensured the integrity of the analyses.

### ***Participation Across Time***

To date, eleven waves of data collection have been launched with various combinations of respondents, including parents/caregivers, children, teachers, and mentors. Some waves have also included the collection of other types of data, including official school records and videotaped observations of mentors and children. Up to wave 9, all assessments were conducted based on when a child and his or her parent/caregiver completed wave 1, with a new wave conducted every subsequent 6 months (i.e., 6 months, 12 months, 18 months, 24 months, etc.). With new funding from OJJDP, and while wave 9 was in progress, wave 10 was launched, this time with an attempt to contact all participating parents/caregivers and children simultaneously, rather than in order of when their wave 1 assessment was completed. By wave 10, the average participant in the study had been in the study for 1814 days (SD = 221 days), with a minimum of 1452 days and a maximum of 2286 days (alternatively, mean 4.97 years, range 3.98 to 6.26 years).

**Table x. Completion Rates by Respondent during Phase I of The Child Study (N = 278)**

Respondent and Type	Wave				
	1	2	3	4	5
Parent/Caregiver Interview	278	247	222	222	242
Percentage Completed	100	89	80	80	87
Child Interview	277	127	214	118	239
Percentage Completed	99	81	77	76	86
Teacher-Completed Questionnaires	N.A.	212	N.A.	224	N.A.
Percentage Completed	--	76	--	81	--
Mentor Interview	N.A.	141	N.A.	137	N.A.
Percentage Completed	--	90	--	88	--

Mentor-Child Video Observation	N.A.	118	N.A.	118	N.A.
Percentage Taped	--	76	--	76	--
Official School Record	174	212	N.A.	225	N.A.
Percentage Collected	63	76	--	81	--

*Notes.* N.A. = not applicable/not collected.

Since multiple waves were in progress when OJJDP funding arrived, the funding ensured both (a) the completion of the original design for Phase I of the study, which, as noted above, comprised the first five waves of data collection and followed children from study recruitment during kindergarten or first grade through their first three years of participation in the mentoring program, and (b) the continuation of Phase II of the study, which is following children as they continue to participate in the mentoring program into their middle school years. As seen in Table x, the first phase of the study is now complete, with good participation rates from all respondents. As seen in Table y, the second phase of the study is still in progress, with several waves of data collection ongoing. This phase has been marked by periods of uncertainty about continued funding as well as insufficient levels of funding, and tracking participants has been more challenging than in the first phase.

**Table x. Completion Rates by Respondent during Phase II of The Child Study (N = 278)**

Respondent and Type	Wave					
	6*	7****	8**	9***	10***	12***
Parent/Caregiver Interview	172	218	72	141	183	N.A.
Percentage Completed	62	78	26	51	66	--
Child Interview	93	28	37	N.A.	184	N.A.
Percentage Completed	60	10	24	--	66	--
Teacher-Completed Questionnaires	191	N.A.	159	N.A.	100	30
Percentage Completed	69	--	57	--	36	11
Mentor Interview	128	N.A.	94	N.A.	54	N.A.
Percentage Completed	82	--	60	--	35	--
Mentor-Child Video Observation	82	N.A.	24	N.A.	N.A.	N.A.
Percentage Taped	53	--	15	--	--	--
Official School Record	187	N.A.	98	NA	67	34

Percentage Collected	67	--	35	--	24	12
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*Notes.* N.A. = not applicable/not collected. \*Child interview for Intervention condition only ( $n = 156$ ). \*\*Both parent/caregiver and child interviews discontinued. \*\*\*Assessment wave still in progress. \*\*\*\*Child interview discontinued.

Over time, most families have chosen to continue to participate in the study, and attrition has been either unrelated or weakly related to variables of interest. By the end of the OJJDP funding period, 14% of families had completed all nine waves of data collection (counting wave 9 and wave 10 as "one" wave), 35% had completed eight waves, 20% seven waves, 13% six waves, and 18% five or less waves. Thus, over 80% of the sample has completed 6 or more waves (with 78% of Control participants and 81% of Intervention participants). The total number of completed waves was not associated with condition ( $t [276] = 0.68$ , n.s.), with the average number of waves completed by Control participants being 6.9 ( $SD = 2.3$ ), and by Intervention condition participants, 7.0 ( $SD = 2.4$ ).

However, the number of completed waves was associated with site ( $F [3,274] = 2.86$ ,  $p < .05$ ). Follow-up Scheffe contrasts indicate that only two sites differed significantly from each other, with means for completed waves of 7.0 ( $SD = 1.8$ ) for Site 1 versus 6.0 ( $SD = 2.6$ ) for Site 2. The other two sites had means and standard deviations close in magnitude to Site 1. Based on chi-square analyses, the number of completed waves was not associated with sex, race/ethnicity, or parent/caregiver marital status. The correlations between completed waves and continuous measures were examined, and no relations were found between completed waves and child age or family income. Only two baseline measures showed statistically significant, but small in magnitude, correlations with completed waves: the CBCL externalizing scale score ( $r = 0.15$ ,  $p < .05$ ) and the CBCL internalizing scale score ( $r = .14$ ,  $p < .05$ ).

### ***Completion Rates During Current Funding Period***

Completion rates during the period of OJJDP funding, based on the "active participant" sample size proposed in the grant for this funding period, are listed in Table x. Most importantly, the rates for parent/caregiver and child interviews are similar to the parent/caregiver completion rate at wave 7 (which is now finished). In contrast, the completion rates for teachers (i.e., completed questionnaires) and for schools (i.e., official records return) appear relatively low, but throughout the study, these are the most difficult types of data to collect. Further, getting a respectable level of completion on these types takes several years of effort, so any one year sample will have a low completion rate. With continued effort, it is possible that the completion rates for these respondents will be more in line with those in Table x. This will only be true, however, with a significant increase in staff time committed to this work, given that there are now a much greater number of teachers, schools, and school districts that encompass the sample than at the beginning of the study. In all, 825 different assessments were conducted during the OJJDP funding year.

**Table x. *Completion Rate by Respondent***

Respondent	Unique Participants	Completion Rate	Total Assessments
Both Conditions ( $N = 259$ )			
Parent/Caregiver	198	76.4%	252
Child	184	71.0%	184
Teacher	121	51.7%	134
School	123	51.4%	133
Intervention Condition Only ( $n = 148$ )			
Mentor	104	70.3%	122

### ***Status of Sample at End of Funding Period***

By the end of the funding period, 92% of the sample had participated in at least some assessments within the past few years, and 74% had participated in the very most recent assessment (see Table x). Recent participation rates were similar by condition. To date, only 26 of the original 281 participants in the study have withdrew or been dropped (due to extended periods of no contact) from the sample. Considering all participants, including those who withdrew or were dropped, at the end of the current funding period, the average number of days participating in the study was 1586 days ( $SD = 461$ ), with a minimum of 180 days and a maximum of 2286 days.

**Table x. Status of Sample at the End of Current Funding**

Status	Intervention	Control	Total
Original Sample	159	122	281
Withdrew and Requested Data Pulled	3	0	3
Analyzable Sample	156	122	278
Withdrew or Dropped	11	12	23
Recently Participating Sample	145	110	255
Recent Assessment	114	92	206
Known Location but Unable to Reach	26	15	41
Unknown Location	5	3	8

### ***Intervention Delivery***

At this point in The Child Study, the average child has had 2 mentors over a period of 1584 days (see Table x). Across his or her mentors have provided an average of 722 hours of service, including both "direct" service – in person contact with the child – as well as "indirect" service – work done on behalf of the child such as communicating with parents and teachers, and finding appropriate referrals to assist with a particular problem the child has.

**Table x. *Contact with Mentors* (N = 156)**

Type of Contact	Mean	Median	SD	Min.	Max .
Total Number of Mentors	2.1	1	2.1	0	9
Cumulative Days with a Mentor	1584	1823	691	0	2793
Cumulative Service Hours (Direct and Indirect)	722	754	386	0	1746

*Note.* Min. = minimum. Max. = maximum.

While the average number of mentors was about 2, as listed in Table x, over 30% of children have had more than two mentors. This is partly by design, although this was a design detail that introduced after the study was conceived and started. As noted in previous sections, early in the study, one of the sites (Site 2) changed their program model and incorporated college student mentors from local colleges who were majoring in social work. These mentors provide service for one academic year. The following year, a new mentor works with a child. During the summer in between student mentors, a "master mentor", who also supervises the student mentors during the year, serves as a child's mentor. This model has increased the number of mentors some children in the study have received, and is partially responsible for the frequency distribution in Table x. Despite this design issue, however, both the median and the mode for the number of mentors is 1, which is in keeping with the program model of the Friends of the Children program as of the beginning of this study. Notably, only 8% of the children randomly assigned to the Intervention condition never met with a mentor.

**Table x. *Number of Mentors by End of Study* (N = 156)**

Number	Count	Percent	Cumulative Percent
0	12	--	--
1	77	54%	54%
2	31	22	76
3	15	10	86
4	4	3	89
5	0	0	89
6	2	1	90
7	4	3	93
8	6	4	97





**Table x. Indirect Service Provision (n = 156)**

Type	Mean	SD	Minimum	Maximum
Total Hours	84	66	0	332
Hours Spent Communicating with Parents/Caregivers	38	34	0	197
Hours Spent Researching or Planning	22	27	0	136
Hours Spent Communicating with School Staff	11	14	0	71
Hours Spent Communicating with Other Parties	11	15	0	102

As discussed above, mentors develop and maintain plans for helping children achieve developmentally appropriate and individually sensitive milestones in five key areas (see Table x). On average, 94% of mentors direct and indirect service hours were dedicated to working on such milestones. The most common area to work on, social and emotional development, employed almost 40% of the average time of a mentor, followed by school success (26%). About 10% of time, respectively, was spent on each of the other three milestone areas.

**Table x. Milestone Area Service Hours (n = 156)**

Area	Mean	SD	Minimum	Maximum
Total Hours	679	390	0	1742
Social and Emotional Development	269	169	0	717
School Success	179	122	0	760
Healthy Habits	95	73	0	340
Making Good Choices	71	62	0	396
Skills for the Future	63	48	0	242

One indicator of the success of a mentoring program, particularly with younger children as in this study, is the perceptions of parents/caregivers about the program. As noted in Table x, parent/caregiver satisfaction with the Friends of the Children program has been very high throughout the entire course of the study. At each wave of the study, parents/caregivers were asked to rate how they felt about various aspects of the program using Likert scales coded, for example, "very helpful", "quite helpful", "somewhat helpful", "a little helpful" or "not helpful". Parents/caregivers almost uniformly chose on of the two most positive options. Overall,

parents/caregivers perceive the program has helpful to their child; they perceive their child's mentor as helpful; and they almost unanimously would recommend the program to other families.

**Table x. *Satisfaction with the Mentoring Program (n = 156)***

Wave	2	3	4	5	6	7	8	9	10
<i>N</i>	129	118	116	131	93	119	36	59	98
Overall, how helpful is this mentor to your child?									
Very/Quite	93%	91%	96%	94%	88%	94%	95%	95%	91%
Not	1	2	1	0	0	2	5	2	1
Overall, how helpful has the mentoring program been for your child?									
Very/Quite	94	95	95	94	93	95	97	97	98
Not	1	2	0	1	0	2	3	2	1
Would you recommend the mentoring program to other families?									
Strongly/Recommend	97	97	97	94	96	96	97	95	97
Strongly/Not	1	1	0	2	1	1	0	3	0

At the end of the OJJDP funding period, the majority of children still had mentors (see Table x). As noted earlier, 8% of children never had a mentor, and by the end of the funding period, an additional 18% of children did not have a mentor (but at some point prior did). Thus, 74% of children were still receiving mentoring after an average of 5 years of participation in the Friends of the Children program.

**Table x. *Mentoring Status by End of Study (N = 156)***

Status	Count	Percent
Never had a Mentor	12	8%
Had a Mentor, but Not at End of Study	28	18
Had a Mentor at End of Study	116	74

One of the policies of the Friends of the Children program is to continue to provide mentoring to children even when their families move, as long as the moves are within a certain number of miles from the Friends of the Children office. For example, in one site located in a large metropolitan area, as long as a move was within 30 miles of the office, a mentor would

continue to meet with a child. As seen in Table x, this strategy means that even with a move, at the end of the funding period, most children still lived in relatively close proximity to their Friends of the Children offices. For each site, almost all moves were within the local metropolitan area, with Site 1 at 96%, Site 2 at 100%, Site 3 at 97%, and Site 4 at 96%. The average distance of a move outside of the metropolitan areas for each of the sites was approximately 90 miles.

**Table x. Geographic Location of Sample in Recent Waves (N = 278)**

Location	Count	Percentage
Original States	258	93%
Massachusetts	40	14%
Oregon	103	37
New York	62	22
Washington	53	14
New States	14	5
California	2	1
Connecticut	1	>1
Delaware	1	>1
Florida	1	>1
Georgia	5	2
New Jersey	1	>1
South Carolina	2	1
Virginia	1	>1
New Countries	1	>1
Mexico	1	>1
Unknown	5	2

### ***Outcomes: Phase I***

**Analytic Approach.** There were a limited number of variables available at the third follow-up point with adequate data for analysis. Most of these were completed by parents or caregivers. With the exception of school reports, variables with more than 50% of the data missing were not analyzed. Missing data were handled with either multiple imputation (MI; Little & Rubin, 2002) or, when possible, by using maximum likelihood estimation (MLE). Both methods have been shown to be better than ad-hoc methods, such as mean imputation or listwise

deletion (complete case analysis), which can reduce power and introduce bias when missing data are not missing completely at random (Feldman & Rabe-Hesketh, 2012; Schafer & Graham, 2002). MI and MLE assume data are *missing at random* which means that the missingness is predicted by variables included in the analysis.

By Year 3, parent and teacher reports for the Child Behavior Checklist (CBCL) and teacher reports on the Behavioral and Emotional Rating Scale (BERS) had been collected at 4 time -points (including baseline). Two-group hierarchical linear models (HLM; also known as growth models or mixed models) were used to analyze the CBCL and BERS scale subscores. HLM yields individual estimates of the level at the intercept (when time = 0) and change across time. In these models, the time zero was placed at the last timepoint, so the estimates for the intercepts represented the levels 3 to 4 years after the intervention took place. The two-group model allows comparisons between control and intervention groups on all estimates, including variances, residual variances, and covariate effects. A difference between two groups on a covariate effect is equivalent to an interaction between group membership and that covariate.

Three models were run for each subscale outcome: (1) unconditional, (2) site only as a covariate, and (3) site plus demographic covariates (age, gender, and race, including an interaction between African American race and male, since this particular subgroup was more prevalent than other subgroups in this study). Clustering within schools was controlled for because the characteristics of the school a child attends might have an effect on the outcomes of interest. In previous analyses, controlling for clustering within mentors did not affect the outcomes substantially, and in general, the intra-class correlations were very low. This could have resulted from cross-classification between children and mentors, where a child could have several different mentors across the 3 to 4 year span, while, at the same time, a mentor could be

working with several different mentees at one time. Unfortunately, the sample size for this study is small enough the intricacies of clustering by mentors who are changing over time are relatively complicated to handle within conventional models. In separate analyses, we investigated the effects of several aspects of the relationship between Intervention condition participants and their Year-3 mentors on the intercept of the growth model. We analyzed effects of each of the relationship values (the number of different mentors, the number of direct service hours between a child and his or her mentors, and the mentor's report of his or her relationship with the child).

For measures related to behavior and adjustment at school, regression, t-tests and  $\chi^2$  analyses were used to examine to several Year 3 single-variable outcomes. We had school data from two sources: the parents' reports and school reports. In the parent-reported data, there were, for most variables, so few negative reports that regression with control variables included was not an option. For the parent-reported school variables, therefore,  $\chi^2$  analysis was used to assess differences between control and intervention groups. Unfortunately, the school-related data from teachers had far more missing data than the parent-reported data. We thus used two approaches to analyzing the school data. We used t-tests to assess observed data on days tardy, days absent, number of referrals for disciplinary problems, number of suspensions, and number of days suspended. We also used multiple imputation and analyzed the same variables in regression analyses. In the latter analyses, we were able to control for site, age, and race. Teacher-reported scores for math and reading levels were also available. These scores had three levels (below grade level, at grade level, and above grade level) and were missing more data than the other school variables. We analyzed the observed data with  $\chi^2$ s and the full imputed data, with ordinal

logistic regression. As was the case with the other school-report variables, we included demographic and site covariates in the latter analyses.

***Findings.*** Across each of the analyses detailed above, no main effects were found for the intervention. A variety of trends were found in various sub-analyses, such as potential differences between the intervention and control groups within a specific site, but none of these were statistically significant and all had very small effect sizes. The summary of the findings is that up to the year three follow-up point, outcomes for the Intervention and Control conditions appeared to be quite similar.

### ***Outcomes: Phase II***

The primary objectives of this phase of the study were to test (a) the effects of study condition on the primary outcome measures, (b) whether program effectiveness was moderated by site of the study and baseline characteristics of the child, and (c) the associations between program engagement and outcomes. An endpoint analysis was conducted based on the most recent caregiver and youth reports assessed at either wave 9 or wave 10, and on the most recent teacher reports assessed at either wave 8 or wave 10. Analysis of covariance (ANCOVA) was used to test the effects of study condition on the endpoint outcome measures, adjusting for baseline scores of the outcome and other covariates described below. Both non-nested and nested (nesting within mentor and site) ANCOVA models were tested as described below.

***Descriptive Statistics for the Outcome Measures.*** Table X presents the available sample size, means, and standard deviations for the outcome measures at baseline and endpoint. All outcomes were screened for normality. Parent report of youth trouble in school showed excessive skew and kurtosis and was normalized using a log-to-base-10 transformation for subsequent

analysis; none of the other outcome measures were transformed prior to analysis. The outcomes examined included the following measures:

*Parent Report on Youth:*

- CBCL externalizing T-score
- CBCL internalizing T-score
- Total strength index score from the BERS
- Parent report of trouble in school across five items (e.g., suspended from school, expelled from school) were used to create a sum score of those items endorsed “yes”
- Parent report of child’s behavior in school was assessed with one item (In general how is his/her behavior at school this year?) with a five point response option scale (1=very poor, 5=very good)
- Parent report of how their child was doing with school work was assessed with one item (How is he/she doing with his/her school work this year?) with a five point response option scale (1=very poor, 5=very good)

*Teacher Report on Youth:*

- CBCL externalizing T-score
- CBCL internalizing T-score
- Total strength index score from the BERS

*Youth Self Report:*

- The child interview was used to create a deviant peer score across five items (e.g., Do your friends get in trouble in school) by summing the number endorsed as “yes”.
- The child interview was used to create a child antisocial behavior across five items (e.g., Do you get in trouble in school by summing the number endorsed as “yes”
- Youth report of trouble in school across six items (e.g., skipped or cut class, suspended, expelled) were used to create a sum score of those items endorsed “yes”.
- Child report of homework completion was assessed with one item (How often do you complete all of your homework on time?) with a five point response option scale (1=all of the time, never=very good).

**Table X. Descriptive Statistics for the Outcome Measures at Baseline and Endpoint**

Outcome measure Study condition	Baseline			End Point		
	N	Mean	SD	N	Mean	SD
Parent Report CBCL Externalizing						
Control	121	56.57	8.98	92	53.17	11.69
Intervention	154	54.75	9.66	114	49.12	10.54
Parent Report CBCL Internalizing						
Control	121	50.31	10.07	92	51.14	9.67
Intervention	154	50.31	10.45	114	49.17	10.72
Teacher Report CBCL Externalizing						



Outcome measure Study condition	Baseline			End Point		
	N	Mean	SD	N	Mean	SD
Control	NA	NA	NA	68	60.82	10.78
Intervention	NA	NA	NA	101	59.06	11.04
Teacher Report CBCL Internalizing						
Control	NA	NA	NA	68	55.69	9.67
Intervention	NA	NA	NA	101	55.44	9.04
Parent Report BERS Total Strength Index						
Control	118	54.42	10.16	76	53.95	13.04
Intervention	148	56.11	11.79	106	59.46	10.82
Teacher Report BERS Total Strength Index						
Control	NA	NA	NA	42	49.19	15.13
Intervention	NA	NA	NA	70	48.39	13.01
Parent Report of Youth Trouble in School						
Control	122	0.50	0.80	56	0.79	1.20
Intervention	156	0.57	0.97	59	0.47	0.45
Parent Report of Youth School Behavior						
Control	120	3.97	1.09	93	4.12	0.98
Intervention	155	3.98	0.96	115	4.38	0.81
Parent Report of Youth School Work						
Control	119	4.13	0.96	76	4.05	0.86
Intervention	155	4.14	0.90	65	4.22	0.87
Youth Report of Deviant Peers						
Control	121	2.02	1.47	75	1.23	1.24
Intervention	156	2.14	1.51	109	1.37	1.37
Youth Report of Antisocial Behavior						
Control	121	0.96	1.11	75	0.81	0.90
Intervention	156	0.97	1.06	109	0.91	1.03
Youth Report of Trouble in School						
Control	NA	NA	NA	75	0.75	0.96
Intervention	NA	NA	NA	109	0.79	1.03
Youth Report of Homework Completion						
Control	NA	NA	NA	74	1.88	0.72
Intervention	NA	NA	NA	107	1.75	0.75
NA = not available						

**Baseline Covariates and Moderators.** Potential covariates included sex, age at baseline, race coded as four dummy variables (white vs. non-white, black vs. non-black, Hispanic vs. non-

Hispanic, and multiracial/other vs. non-multiracial/other), and time of observation. The potential covariates were correlated with each of the endpoint outcomes and those correlating greater than .20 were tested for the homogeneity of regression assumption (i.e., moderation of condition effects). Covariates that correlated greater than .20 with the outcome and met the homogeneity of regression assumption were included in the subsequent ANCOVA models as covariates. All models included time of observation to adjust for differing assessment schedules. When available, the ANCOVA models included the baseline assessment of the outcome; baseline assessments of the outcomes were not available for teacher report or youth report of trouble in school or homework completion. In addition, a baseline child risk composite score and study site were tested as potential moderators of condition effects. The child risk composite score was computed by summing the number of 22 baseline risk factors endorsed by parents (e.g., child was in foster care, family income below US poverty threshold); scores ranged from 0 to 17.

***ANCOVA Results: Condition Effects.*** The results for the non-nested ANCOVA models are presented in Table X. Significant condition effects favoring the FOTC condition were found for parent reports of the BERS Total Strength Index ( $p = .008$ ;  $d = .408$ ) and youth positive school behavior ( $p = .015$ ;  $d = .345$ ). Trend-level and clinically meaningful effects favoring the FOTC condition were also found for parent reports of CBCL Externalizing scale ( $p = .050$ ;  $d = .278$ ) and youth trouble in school ( $p = .064$ ;  $d = .352$ ; reduced sample size due to missing data).

**Table X. ANCOVA Results: Condition Effects at Endpoint Adjusting for Baseline Covariates**

Outcome (Analytic Sample Size)	Adjusted Means		Condition Effect		
	Control	FOTC	F-value	p-value	Cohen's d
Parent Report CBCL Externalizing (n=205)	52.47	49.70	3.90	<b>.050</b>	<b>.278</b>
Parent Report CBCL Internalizing (n=205)	51.50	48.81	0.60	.438	.110
Teacher Report TRF Externalizing (n=169)	60.82	59.06	0.88	.349	.154
Teacher Report TRF Internalizing (n=169)	55.62	55.51	0.01	.936	.045

Parent Report BERS Total Strength Index (n=173)	54.00	58.67	7.13	<b>.008</b>	<b>.408</b>
Teacher Report BERS Total Strength Index (n=112)	49.09	48.47	0.06	.814	.035
Parent Report Youth Trouble in School (n=115)	0.19	0.12	3.50	<b>.064</b>	<b>.352</b>
Parent Report Youth Behavior in School (n=207)	4.11	4.40	6.06	<b>.015</b>	<b>.345</b>
Parent Report of Youth School Work (n=140)	4.03	4.22	1.65	.201	.220
Youth Report of Deviant Peers (n=184)	1.22	1.37	0.55	.461	.110
Youth Report of Antisocial Behavior (n=184)	0.80	0.92	0.69	.406	.127
Youth Report of Trouble in School (n=184)	0.78	0.76	0.03	.874	.020
Youth Report of Homework Completion (n=181)	1.88	1.74	1.48	.226	.180
Bolded entries highlight condition effects significant at trend level or greater. Cohen's d is provided as a measure of effect size with the convention .2 small, .5 medium, and .8 large					

**ANCOVA Results: Moderating Effects.** Moderation of condition effects were tested for (a) baseline scores of the outcome (where applicable), (b) the baseline measure of child risk, (c) race, and (d) site. Because African-American was the largest racial category (46% of the sample), the race moderating variable tested was coded as African-American vs. some other race. Each moderator variable was added to the models described above and the multiplicative interaction term with condition tested. No significant moderator X condition interaction terms were found (all  $p$ 's > .05), indicating that the program effects were similar across baseline scores of the outcomes, child risk status, race, and study site.

**Nested ANCOVA Results: Condition Effects.** The ANCOVA models were also tested to account for the nesting components of the study design; youth nested within mentors and mentors nested within site. Mentors changed over the course of the study for some youth. However, the study lacks statistical power to accommodate a multilevel multiple membership model. As an alternative, partially nested ANCOVA models to account for the clustering students within mentors were tested with two approaches: (a) the first assigned mentor, and (b) the most recent mentor. For the control condition, the 13 FOTC youth without mentors, and the

mentors with only one FOTC youth, mentorship in the partially nested models was treated as a group of one. More specifically, three-level random effects ANCOVA models with youth nested within mentors and mentors nested within site were tested. Three sources of random variability was modeled; one associated with youth, one associated with mentors, and one associated with site. Prior to testing for condition effects unconditional models were run and the variance at each level was examined. If variance at a level was estimated at zero then nesting at that level was removed. Effect size was computed as a d-statistic dividing the condition effect (adjusted endpoint mean for the FOTC group minus the adjusted endpoint mean for the control group) by the pooled endpoint standard deviation.

Table X presents the condition effects from the random effects ANCOVA models based on the nesting within the most recent mentor. The nested models based on the first mentor yielded comparable findings to the nested models based on the most recent mentor and are not reported. The estimate is the estimated differences in the outcome between the FOTC and control conditions (FOTC adjusted mean - control adjusted mean). The results of the nested models were comparable to the non-nested models described above in which significant effects favoring the FOTC condition were found for parent reports of the BERS Total Strength Index ( $p = .009$ ;  $d = .397$ ) and youth positive school behavior ( $p = .015$ ,  $d = .326$ ), and trend-level effects favoring the FOTC were found for parent reports of CBCL Externalizing scale ( $p = .092$ ;  $d = .238$ ) and youth trouble in school ( $p = .064$ ;  $d = .318$ ).

**Table X. Nested ANCOVA Results: Condition Effects at Endpoint Adjusting for Baseline Covariates and Nesting within Site and Mentor**

Outcome measure	Estimate	t-value	p-value	Cohen's d
CBCL Externalizing	-2.63	-1.70	<b>.092</b>	<b>.238</b>
CBCL Internalizing	-1.38	-0.85	.395	.133
TRF Externalizing	-1.90	-1.03	.304	.174
TRF Internalizing	-0.22	-0.14	.886	.021

Outcome measure	Estimate	t-value	p-value	Cohen's d
BERS Total Strength: Parent Report	4.67	2.66	<b>.009</b>	<b>.397</b>
BERS Total Strength: Teacher Report	-0.81	-0.28	.777	.059
Parent Report Youth Trouble in School	-0.07	-1.87	<b>.064</b>	<b>.318</b>
Parent Report Youth Behavior in School	0.29	2.46	<b>.015</b>	<b>.326</b>
Parent Report Youth Schoolwork	0.19	1.29	.201	.208
Youth Report Deviant Peers	0.14	0.69	.490	.099
Youth Report Antisocial Behavior	0.13	0.84	.404	.122
Youth Report Trouble in School	0.02	0.14	.891	.022
Youth Report on Homework	-0.10	-0.90	.370	.136
Bolded entries highlight condition effects significant at trend level or greater. Cohen's d is provided as a measure of effect size with the convention .2 small, .5 medium, and .8 large				

***Nested ANCOVA Results: Moderating Effects.*** The same moderators described above were examined for the nested models. Similar to the non-nested ANCOVA results, no significant moderator X condition interaction terms were found (all p's > .05), indicating that the program effects were similar across baseline scores of the outcomes, child risk status, and race.

***Examination of the Association between Program Engagement and Outcomes.*** Four indices of the program engagement of the FOTC intervention examined were (a) total time period that a youth had a mentor; (b) cumulative number of total direct mentor service hours spent with the youth; (c) total number of mentors per youth; and (d) stability of mentorship over time (0 =no mentor, 1 = one mentor, 2 = more than one mentor). Key findings on these variables include the following:

- The average number of days a youth had a mentor was 1,614.7 (SD = 661.5, minimum=0, maximum=2,793). The average number of days translates into approximately 53 months or 4.4 years.
- The average number of mentor hours was 644.3 (SD = 349.2, minimum=0, maximum=1,649.8)
- The average number of mentors was 2.1 (SD = 2.2, minimum=0, maximum=9)

- Of the 156 FOTC intervention youth 12 (8%) had not mentor, 77 (49%) had one mentor, and 67 (43%) had more than one mentor.

The three-level mixed ANCOVA models described above were used to test the within-subjects effects of program engagement for the 156 FOTC intervention participants. The last reported mentor was used for clustering youth within mentors. Each of the intervention indices described above were included, separately, as a predictors of adjusted mean endpoint outcome (adjusted for baseline scores and covariates that correlated .20 or greater with the outcome). Total time with a youth, direct service hours spent with youth, and total number of youth were added as continuous predictors in the models. The stable mentorship variable was added as a categorical predictor and least square mean estimates of the adjusted means were examined between each level of stable mentorship. No significant associations were found between the indicators of intervention engagement and the endpoint study outcomes (all  $p$ 's > .05). Hence, no significant dose-response associations were obtained.

### Products

Products from the current funding period are as follows.

#### 1. Presentations

- a. Lakind, D., Patel, D., Atkins, M. S., & Eddy, J. M. (October, 2013). *Youth mentoring in context: Mentor perceptions of youth, environment, and the mentor role*. Paper presented at the annual University of New Mexico Mentoring Institute Conference, Albuquerque, NM.
- b. Eddy, J. M., Martinez, C. R., Jr., Feldman, B., Cearley, J. J., Herrera, D., Burraston, B., Grossman, J., Harachi, T. W., Foney, D., Kjellstrand, J., & Borja, S. (June, 2014). *Randomized trial of a professional mentoring program:*

*Intermediate outcomes.* Paper presented at the third biennial American Psychological Association Division 45 Research Conference, Eugene, OR.

## 2. Publications

- a. Eddy, J. M., Cearley, J. J., Bergen, J., & Stern-Carusone, J. (2013). Children of incarcerated parents. In D. L. DuBois & M. Karcher (Eds.), *Handbook of youth mentoring* (2nd ed.) (pp. 369-382). Thousand Oaks, CA: Sage.
- b. Lakind, D., Eddy, J. M., & Zell, A. (in press). Mentoring youth at high risk: The perspectives of professional mentors. *Child and Youth Care Forum*.
- c. Eddy, J. M., Martinez, C. M., Jr., Metzler, C. W., Heyman, R. E. (in press). Environmental influences: Family. In Z. Sloboda & H. Petras (Eds.), *Advances in Prevention Science: Volume 1, Defining Prevention Science*. New York: Springer.
- d. Eddy, J. M., Feldman, B., & Martinez, C. M., Jr. (in press). Short and long term impacts of a Coercion Theory-based intervention on aggression on the school playground. In T. J. Dishion & J. Snyder (Ed.), *Handbook of Coercive Relationship Dynamics*. New York: Oxford University Press.
- e. Lakind, D., Atkins, M., & Eddy, J. M. (2014). *Youth mentoring relationships in context: Mentor perceptions of youth, environment, and the mentor role*. Manuscript submitted for publication.
- f. Liao, Y., Tate, E. B., Barnett, E., Wen, C. K. F., Miller, K. A., & Eddy, J. M. (2014). *Examining children's disruptive behavior in the wake of trauma: a two-piece growth curve model before and after a school shooting*. Manuscript submitted for publication.

- g. Rhoades, K. A., Leve, L. D., Eddy, J. M., & Chamberlain, P. (2014). *Predicting the transition from juvenile delinquency to adult criminality: Gender specific influences*. Manuscript submitted for publication.
  - h. Eddy, J. M., Martinez, C. R., Jr., Grossman, J., Cearley, J. J., Seeley, J., Gau, J., Feldman, B., Herrera, D., Wheeler, A., Burraston, B., Foney, D., & Harachi, T. (2014). *A randomized controlled trial of a 12-year professional youth mentoring program: Effects during elementary school*. Manuscript in preparation.
  - i. Eddy, J. M., Rebbe, R., Haggerty, K., Cearley, J. J., Martinez, C. R., Jr., & Grossman, J. (2014). *Quality of mentoring relationships: A longitudinal multi-method observational study*. Manuscript in preparation.
3. If desired by OJJDP, a final report suitable for a non-technical audience, as well as similar non-technical briefs on the study will be developed.

### **Remaining Tasks**

Final analyses and manuscript writing and revision will occur during the winter and spring of 2015, as will the writing of any requested non-technical reports and briefs. During this period of time, we also will continue to search for a new funder that will enable us to follow the sample through adolescence and into their emerging adulthood years. We have submitted a variety of letters of intent and applications, but have not yet secured new funding. Our next discussions with two potential funders -- both private foundations -- will occur during late January of 2015.

### **Discussion**

The aims of The Child Study were (1) to investigate whether a theoretically and empirically based long-term youth mentoring program for high risk children positively impacts



the behavior and well-being of children across the first four years of the program; (2) to investigate whether the quality of the mentor-child relationship, as measured both by independent observers and mentor, child, and parent/caregiver perceptions, is related to program persistence, satisfaction, and engagement, as well as the behavior and well-being of children across the first four years of the program; (3) to explore differential effectiveness of the FOTC program on the behavior and well-being of children by ethnicity, child gender, and baseline risk status and levels of problem behaviors; and (4) to investigate the cost-effectiveness and cost-benefit of the FOTC program across the first four years of the program.

With respect to the primary aim, no differences were found in terms of outcomes between children randomly assigned to the intervention condition versus the control condition during the initial years of the FOTC program based on the Phase I intent-to-treat analyses. However, the Phase II endpoint analysis based on available data from the most recent assessment did yield clinically meaningful findings favoring the FOTC condition based on parent reported data on BERS Total Strength Index, school-related behaviors, and CBCL externalizing problem behaviors. Hence, meaningful differences between the conditions appear to be emerging for those youths who continued to participate in the most recent assessment. These results are considered tentative as we continue to conduct analyses and examine the impact of missing data, study attrition, and program engagement on these promising findings.

In terms of the secondary aims of the study, the quality of the mentor-child relationship also was not related to outcomes, and program effects did not vary significantly by various potential moderators of outcomes. Given that effects were not observed for the Phase I intent-to-treat analyses, although we collected cost related data, we do not report them here. We will calculate cost-effectiveness and cost-benefits of the program after completing the Phase II

analyses. In short, during the early years of the program, FOTC does not appear to be impacting children in the assessed domains, though program effects appear to be emerging based on the Phase II endpoint analyses on the most recent assessments (at approximately 5 years into the program). These domains, namely child behavior problems, psychopathology, strengths, and academic achievement, were chosen not only because of their importance in the developmental model underlying this study, but also because they have been found to be impacted in a variety of other outcome studies of mentoring. The lack of findings in the initial years may be because mentoring programs in general have not been found to lead to powerful outcomes, even in the short term. In the Dubois et al. (2002) meta-analysis, average effect sizes tended to be small, and in many studies, programs had negligible effects. However, the program in this study had a variety of characteristics that have been found to lead to strong effects in past research. Thus, more likely reasons for a lack of more robust effects may be the variety of ways in which this particular study departs from prior mentoring studies.

Unlike most past studies of mentoring, the sample in this study was selected to be a high risk for subsequent problems using a “multiple gate” identification strategy that included both quantitative and qualitative components. The strategy involved not only asking teachers to complete questionnaires, as has often been done in the past, but also including direct observations of children in their classrooms and on the playground over a six week period, as well as the interviewing of multiple school staff members with experience with the child. This was followed by a committee approach, where the information collected on each child was considered using a “case conference” approach that focused not only the risk factors in a child’s life, but also the protective factors. The purpose was to as accurately identify as possible the children who, all things considered, appeared to be at highest risk for future problems. Perhaps

this approach was more effective than past studies in actually identifying children at very high risk, and if so, perhaps making an impact in the lives of these children will take a more significant amount of time than has been the case in past studies. Indeed, the initial Phase II endpoint analyses suggest that FOTC program effects may be emerging based on the most recent assessments.

Alternatively, while the children identified may be at high risk, they were also quite young when the program, and this study, began. During kindergarten and first grade, even challenging children are not involved in the same level of problem behaviors as at risk children in the typical volunteer mentoring study, who are often in late childhood or adolescence. Thus, this study was truly a “prevention”, rather than an “intervention”, study, and during their early years, prevention studies often have smaller effect sizes than intervention studies. Since not many problems are yet occurring for these children, at present, there are bound to be few, if any, differences between children in the control and an intervention conditions.

Perhaps most importantly, FOTC is a relationship based program. This puts it into contrast to the skill based programs that tend to dominate evidence-based practices lists. The FOTC program does not teach children through a lesson driven training experience that focuses on learning specific cognitive and behavioral skills that can be demonstrated and thus detected immediately. Rather, mentors work with children on a broad set of skills that are intended to build on each other over time, with the intention of helping a child prepare for the challenges to come during adolescence and emerging adulthood. Given this, impacts of the program, if it is in fact successful, seem more likely to emerge when children reach early to mid-adolescence. At this point, children in the sample who are continuing to have troubles are much more likely to actively participate in behaviors that can have major and serious long term consequences, such as

delinquency, frequent substance use, and sexual behavior. This is when intervention effects seem most likely to be detected.

A major accomplishment over the past 8 years has simply been the launching and continuation of this trial. Preparation for the trial began in the mid-1990's (see below) and was strongly encouraged by a variety of funders for many years, but was unfunded prior to the NICHD grant that launched The Child Study. With funding from one R01 grant, the trial was originally to include four sites across the country, to recruit 256 parent/caregiver and child and 32 mentor participants, and to follow child outcomes for 3 years. This would have been challenging enough, but initial funding cuts, compounded by the economic recession and its effects on funding for both the research and service aspects of the study, made the success of the study even more unlikely. However, thanks to the efforts of a wide variety of people, and to additional funding from numerous funders, mostly notably NICHD, OJJDP, the Robert Wood Johnson Foundation, the Edna McConnell Clark Foundation, and the Campbell Foundation, at the end of the eighth year of the trial, the originally hoped for milestones of the study have been met: follow-up assessments continue within the 4 sites and on average, have been conducted across a five year period for participants, most of the original 281 parent/caregiver and child participants are still actively participating in assessments, and children in the study have or soon will enter their adolescent years.

Over the past decade, an extremely popular model for intervening with children living in high risk circumstances has been a community wide approach, such as the Promise Neighborhoods program of the U.S. Department of Education. A primary inspiration for these efforts was and continues to be the work of the Harlem Children's Zone (HCZ). In the "zone" approach, a defined neighborhood is targeted, and a wide variety of resources are brought to bear

to nurture children through their growing up years and into adulthood. Interestingly, the HCZ encompasses one of the sites in this study, but few of the study children at that site participate in HCZ activities. Thus, even when a zone approach is attempted, not all children in the community may be engaged, and the children who are least likely to be so are probably most likely to be the children at current and highest risk for later problems. An individually-focused, long term approach like FOTC seems like an ideal complimentary strategy to a zone approach. It also may be a more feasible strategy when funds for social service activities are limited, as they are and have been during the Great Recession and its aftermath. While FOTC is a relatively expensive program per child, by targeting resources at the children who need support the most, if effective, it may very well be much less expensive than a zone approach. Information on the outcomes and economics of both types of approaches is very much needed to help guide policymakers on what programs are best to help support the most challenged children living in the most challenged neighborhoods so that they, too, have the opportunity to thrive.

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