Fatherhood Research & Practice Network

November 2017

Final Evaluation Report: Enhancing Social Support for Low-Income Fathers

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This document was prepared under grant #90PR0006 from the US Department of Health and Human Services, Office of Planning, Research and Evaluation (OPRE) to Temple University and the Center for Policy Research. The points of view expressed in this document are those of the author and do not represent the official views of OPRE.

Contents

Acknowledgements

This study would not have been possible without the support of many individuals and groups. First and foremost, the staff at the FRPN (specifically Jay Fagan, Jessica Pearson, Nancy Thoennes, and Rebecca Kaufman) were an invaluable resource for designing and implementing the project. This project was also supported by graduate students at the University of North Carolina School of Social Work (Joseph Frey, Quinton Smith, and Ashley Kazouh). Katrina Gay, formerly with Prevent Child Abuse North Carolina, lent her years of experience and support with *Circle of Parents*. Last, but certainly not least, the hard work for this project was done by the staff at WAGES (specifically Patricia Beier, Shurod Hieke, and Tiffany Lucky) and of course the fathers who participated in the study and program.

Executive Summary

In response to the need to enhance fatherhood involvement in low-income families, many promising programs have been developed and implemented across the country. Several parent training and support programs have been shown to improve parent–child relationships and other parenting outcomes. However, few parenting programs have been developed and examined that are delivered specifically to fathers. The available evidence suggests that recruiting and retaining fathers in parenting programs is a challenge, but even less research has examined the effectiveness of such programs. The purpose of this study was to better understand father engagement in a parenting support program, and also to understand whether a peer-support parenting program was effective at improving outcomes for fathers.

This study was a collaborative community-university partnership between a county Community Action Agency providing Head Start/Early Head Start services (HS/EHS; WAGES), and social work researchers at the University of North Carolina (UNC) School of Social Work. This mixed methods study used a quasi-experimental randomized encouragement design to examine the effectiveness of a fathers-only peer support group delivered in a community-based Head Start setting. We implemented a widely available model, *Circle of Parents*®, a peer-support group program represented by a national network of 19 statewide and regional organizations. *Circle of Parents* is a mutual-aid program that was designed to prevent child maltreatment and strengthen families.

We recruited 102 fathers who had a child in HS/EHS and asked them to fill out a questionnaire with items relating to many father and child outcomes. Using randomization, fathers assigned to a "treatment group" were strongly encouraged to attend *Circle of Parents* group and received regular invitations and notifications of group meetings and other group activities for about a year. Fathers in the control group received usual services and were on a waitlist to join the group at the end of the study. As our study progressed, many fathers did not receive the "treatment" they were assigned, so we also used quasi-experimental statistical methods to adjust for selection bias.

Our sample included a high proportion of African-American fathers (84%). The average age of fathers was 32 years, ranging from 19 to 66 years. The majority (77%) of fathers stated that they resided with the target child. Many fathers in our study faced significant economic challenges. Only 62 percent of fathers responded that they had worked at least 20 hours per week over the past six months and only 52 percent reported having a steady job. About a third of fathers reported receiving less than $5,000 in income in the past year from any source.

Overall, we found very low participation and engagement in the *Circle of Parents* groups among fathers randomly assigned to receive the intervention. Less than half (40%) of fathers who received regular encouragement ever attended a single group meeting over the year of the study. There was a small group of fathers who attended consistently and were passionately involved with building up the group. However, extending the group to include a larger population of fathers with children in Head Start was not successful. Findings from qualitative interviews suggest that external barriers (i.e., work schedules), and not perceptions about the program itself, prevented most fathers from participating. Not surprisingly, given the low level of engagement in the program, we did not find many positive impacts on father outcomes, based on analysis of questionnaire responses before and after delivery of the program. Although participants did not experience improvements in social support, there was evidence that fathers who attended *Circle of Parents* had an increase in parenting efficacy, more concerns about child development, and a decrease in parent–child conflict.

Overall, findings of this study are consistent with prior research. Engaging fathers was extremely challenging and participation was much lower than anticipated or desired. Future efforts should explore strategies to provide more frequent and more flexible scheduling options, develop opportunities for individual or smaller-group interactions, and explore home-based or neighborhood-based group meetings.

A. Background and Introduction

A.1 The Need for Fatherhood Research

Children who experience positive father–child relationships exhibit greater well-being as compared with peers without this critically important relationship. The positive effects of the father–child relationship extend across a range of outcomes, including healthy socio-emotional development, fewer problem/risky health behaviors, and improved academic outcomes.[1,2]

Historically, fatherhood programs and policies have been non-existent or have focused on financial support. However, the influence of father–child interaction on child well-being extends far beyond economic support.[2–8] The shift toward other important dimensions of father involvement has been highlighted in recent research, such as direct engagement and interaction with the child; availability and monitoring of child behavior; and responsibility for the child's health, mental health, and academic performance.[1,9,10]

Unfortunately, demographic and social trends in the 1970s to 1990s led to a large number of boys raised without a father figure in the home. The absence of a father role-model became especially prevalent in low-income households. Today, as these boys become fathers themselves, many are not equipped as they transition into this new role due to this lack of a model for positive male parenting. Regardless of their experience with their own fathers, many new low-income fathers face numerous challenges in developing strong parent–child relationships. For example, when attempting to parent successfully, many low-income fathers face challenges posed by employment demands; economic hardships; justice system involvement, including incarceration; and behavioral health problems, including drug and alcohol dependence. Thus, an urgent need exists to provide parenting support programs for young, low-income fathers.

In response to the need for programs that effectively enhance fatherhood training and involvement, many new initiatives have been developed and implemented across the country. However, few of these initiatives have been rigorously evaluated. Moreover, there is growing concern that current programs are not only failing to recruit and retain the fathers most in need of parent training but also that many programs lack efficacy to enhance father involvement.[2,11,12] Indeed, much more is known about the importance of fathering relationships than how to improve the practice of being a positive role model for a child.[2,13–15] Father peer-support programs offer a promising strategy to enhance fathers' social support, and thereby improve father–child involvement. To better understand the utility of peer support for improving father involvement, this study aimed to assess the unique impact of the *Circle of Parents* peer-support group model.

A.2 Factors Impacting Positive Father Involvement

Although limited, the available research on father-involvement programs is clear: father involvement promotes healthy child development. However, today's young fathers face many barriers to being involved in their children's lives, particularly low-income fathers. Fathers face structural barriers, including unstable or demanding employment as well as high rates of non-residency in the child's home.[13,16] Many fathers with a history of involvement with the child welfare system have a generalized distrust of the social service agencies that typically provide fatherhood programs. Thus, young men's perceptions regarding social services can be a salient barrier to service engagement. Such distrust is heightened when programs treat fathers through a deficits-based approach.[8,14,17] Fathers who live in separate households from their child's mother also face additional obstacles to child involvement. This situation is often compounded by a tenuous relationship with the child's mother, especially when the mother and her family are unsupportive of the father's involvement with the child. Perhaps the most important barrier stems from young fathers who are extremely isolated from positive males, creating an absence of a fatherhood social network to model and support positive parenting.[13]

Indeed, a fatherhood social network is critically important because those social bonds provide the protective factor of social support that buffers the effects of parenting stress on the parent–child relationship.[18–20] In particular, low-income fathers benefit greatly from peer connections that provide emotional support and encouragement, access to information and resources, and reduced social isolation.[13,20–23] Fathers who receive high levels of support from their social network consistently report greater levels of child involvement.[18,24,25]

A.3 Fatherhood Peer Support

Father peer-support groups leverage the strength of mutual aid by focusing on a group of fathers facing similar parenting experiences and facilitating peer exchange of social support. The positive influence of non-authoritative peers and the comfort with sharing personal challenges and concerns can be much greater than the influence of similar groups led by a professional service provider.19 Fatherhood research has emphasized the importance of integrating fathers in services, providing a flexible and informal approach, and using group-based interventions to counteract the distrust and exclusion of formal professional services.[8,14,26]

A growing body of evidence supports the effectiveness of group-based interventions for improving parenting skills.[8,12,27] For example, parents in a study of one evidence-based parenting program, the Triple P-Positive Parenting Program, reported positive benefits of the group discussion and normalization of parenting struggles.[12] However, few studies have focused on the specific value of peer support and mutual aid in group-based parenting programs, particularly with fathers. Despite the lack of emphasis on peer support in parenting literature, there is an indication that peer support is something that is valued by fathers. A federal study of fatherhood programs in eight states identified peer support as both the most frequently reported primary need among participants, and the second-most frequently provided service.[28] Based on the fathers' reports, this evaluation study found that peer support helps to "cultivate a sense of concern and dignity" among fathers.[28] Peer-support groups and mutual-aid models are often embedded with other services within large, multi-component models. The combination of service strategies within multi-element interventions makes it impossible to understand the distinct effects of peer support as an independent, and potentially effective intervention on its own.

A.4 Father Support and Engagement in Head Start

The current study is an evaluation of a peer support program delivered to fathers of children enrolled in Head Start. This section provides context about Head Start programs nationally to provide additional context for the conceptualization of the study described in this report. Head Start is a federal school readiness program started in 1965 under President Johnson's War on Poverty. Since the program's early development, parent involvement has been an important component of Head Start policy and programming. The focus on parent involvement is premised on the notion that child development and school readiness is strongly influenced by the parent. Although fathers have traditionally had much lower participation in services than mothers, significant efforts have been made to improve involvement and engagement of fathers.[13,14]

Father engagement in Head Start follows the broader Parent, Family, and Community Engagement Framework developed by the federal Office of Head Start. In 2004, the *Building Blocks for Father Involvement* resource was released and in 2013, the *Head Start Father Engagement Birth to Five Programming Guide* was released.[29,30] These documents were made available to Head Start programs seeking to develop evidence-informed fatherhood engagement programs. The "building blocks" for developing programs to engage fathers included:

1. Appreciating how fathers give children a head start.
2. First thoughts on getting fathers involved in Head Start.
3. Building a foundation to work with fathers.
4. Planning for success.
5. Bringing a fatherhood plan to life.

The Head Start Building Block guides are very clear that engaging fathers is without question a challenge in all settings. As reported in the Building Block 4: Planning for Success guide: "Most fathers will not typically think of the Head Start center as a place for men. Bringing them in and convincing them otherwise will take time, patience and persistence."[29, p. 14] The guides provide some suggestions for improving engagement such as, "One of the best recruiting tools available is the father currently involved in the program. Make sure that fathers have good stories about the program to tell their peers."[29, p. 14] With resources such as these in hand, the local project was able to better determine capacity to move forward with an outcome evaluation.

The current project was conceptualized when the partner Head Start agency for this project (Wayne Action Group for Economic Solvency, WAGES) had already established the first three building blocks (i.e., appreciating fathers, thoughts on getting fathers involved, and foundation work with fathers). Given that an ongoing fatherhood program and full-time father involvement coordinator were in place, formative research regarding the father population or existing programming was not conducted and efforts began with "planning for success" and "bringing the program to life."

The research-practice partnership described in this evaluation report began with an informal assessment of the extent to which the planning aspects suggested by the Office of Head Start had been addressed at WAGES Head Start. The agency partners at WAGES (specifically, the Director of Family Services and Male Involvement Coordinator) believed that the agency had paid sufficient attention to the identified aspects of planning to move forward with evaluating program delivery. In addition to the broad challenges with father involvement, a prior Office of Head Start evaluation report indicated that effectively delivering a peer-support group program for fathers in a Head Start setting would bring additional challenges.[31] The 2005 report of the Early Head Start Fatherhood Demonstration examined father involvement programs and peer support programs in 21 sites across the United States.[31] The findings presented in this report cautioned providers and researchers about the challenges encountered by these sites. A brief review of these findings is warranted to give some indication about how the use of *Circle of Parents* models was intended to address some of the lessons learned from this previous evaluation.

The demonstration report specifically examined the use of peer-support groups in Head Start settings. Benefits of support groups cited from existing programs included the opportunities for men to build support networks, reflect on their own childhood experiences, and improve co-parenting. However, the report also confirmed that engagement could be a significant challenge. The key barriers to engagement identified were work schedules, the reluctance of some mothers to have fathers participate, and a general perception that Early Head Start is for women and children only. Based on interviews with coordinators of father programs who implemented peer-support groups, authors of the demonstration report found that, "*while both staff and fathers reported that peer-support groups were relevant and useful, many programs found it difficult to maintain high levels of father attendance.*"[31, p. 45] Specifically, only 21 percent (4 out of 19) of fatherhood coordinators reported that more than half of fathers actively attended support groups. Specific barriers identified by fatherhood coordinators revealed "*while some men enjoyed the opportunity to share their experiences, others reported during focus groups that they felt uncomfortable opening up.*"[31, p. 45] Further, lack of program success was not uncommon in this demonstration project, "*due to lack of interest among fathers, one program completely discontinued its meetings. Three other programs decided to hold breakout sessions for fathers during family activities or parenting events, instead of regular support group meetings.*"[31, p.45]

In summary, these national evaluation projects provided some insight that engaging fathers in a Head Start program broadly would be difficult, and engaging them directly in a peer support would bring additional challenges. However, the benefits of father engagement certainly outweigh the challenges, and prior evaluations have determined that father engagement is possible. The next section reviews existing evidence about successful engagement.

Successful Engagement of Fathers in Head Start. Engaging parents, particularly fathers, has proven challenging in a variety of settings and program contexts. Understanding which fathers do and do not engage in services provides

some insight into the facilitators and barriers of engagement. Studies have identified predictors of father engagement and some have successfully developed strategies to improve engagement.[32–35] Generally, father engagement in parenting programs has been viewed as an extension of a broader indicator of father involvement with their child. Fathers who are not involved with their child will almost certainly not be involved in a parenting program. Therefore, some explanations for father engagement/involvement have centered on individual deficits in the father's character.[32] However, broader explanations reflecting ecological and family systems perspectives examine the multiple, interacting forces that serve as risk or protective factors for father engagement.[33,34] For example, one study of father engagement in Early Head Start found that fathers with higher education, less depression and anxiety, fewer hours of work, and greater social support were more likely to be involved with their child and the parenting program.[35]

A review of studies examining father engagement in behavioral parent training programs identified characteristics of fathers as well as characteristics of the programs that likely limit participation of fathers.[36] In many settings, father involvement is often "marginalized" due to historic preferences to involve only the mother in communicating and scheduling various aspects of a child's education or clinical care, including participation in parenting interventions. The focus on mothers in almost any parenting context is a direct reflection of traditional gender roles regarding child-rearing expectation. Further, parents share responsibilities, and again based on traditional gender roles, mothers are much more likely to report being in the role of primary caregiver for the child. Conversely, studies show that fathers spend more time than mothers engaged in recreational activities.[36] Therefore, compared with mothers, fathers are less likely to find relevance in parenting programs that focus on general parent–child relationships or outcomes that do not directly relate to the typical father–child interactions. Parenting programs often require an assumption that a parent is lacking a specific skill that will be gained from the training program. However, fathers are less likely to admit any problems with parenting or report that they need help with parenting.[36] Therefore, parenting programs often attempt to address aspects of the parent–child relationship that many fathers do not perceive as a relevant problem.

To address these barriers, researchers first recommend explicitly engaging fathers (as opposed to mothers or caregivers broadly) in assessment, treatment, and research.[36] Based on specific needs of fathers, programs can and should be specifically tailored to fathers. Tailoring of a program goes beyond simply limiting participation to male caregivers. For example, the *Coaching Our Acting Out Children: Heightening Essential Skills* program (COACHES) uses sports to directly increase the relevance and acceptability of a behavioral parent training.[36] Fathers receive parenting strategies, and then have the opportunity to practice and receive feedback during the context of a soccer game. Compared to standard classroom-based parent training, fathers assigned to the COACHES intervention have shown greater engagement outcomes (e.g., attendance, on-time arrival, homework completion, consumer satisfaction).[37]

One known study has specifically attempted to develop an intervention to improve father engagement by adapting traditional Head Start activities for fathers.[13] This study implemented five program components: volunteering in the classroom, structured educational activities developed and delivered by fathers, father sensitivity training, father support groups, and father–child recreation activities. Based on findings from a quasi-experimental design, fathers who were highly involved in the program had the greatest gains. Nevertheless, engagement remained a challenge. The median involvement for the intervention group was 4 hours (range 1-449 hours).[13]

Motivation for the Current Study. Taken together, prior peer-reviewed literature and evaluation reports from the Office of Head Start provided a challenging but optimistic outlook for this project and the recruitment of fathers from Head Start settings. Notably, in contrast to other evaluations, the current project had several strengths that were considered assets with the potential to support the success of the project. First, WAGES had a long

history of valuing and providing father involvement programs. Second, the *Circle of Parents* model used by WAGES is widely used in many contexts, with appealing features that offered a potentially strong fit with this setting and population. These features are discussed in the next section. Last, an initial asset to this study was the implementation support provided by Prevent Child Abuse-North Carolina (PCA-NC) for providers of *Circle of Parents* statewide. Although the facilitator of the program was trained in the model at the outset of this project, the availability of technical assistance and a professional provider network was considered a potential strength. More detail regarding the *Circle of Parents* model and WAGES is provided next.

A.5 The *Circle of Parents* Model

Circle of Parents is a mutual-aid program that uses a peer-support group format, and is designed to prevent child maltreatment and strengthen families. *Circle of Parents* seeks to improve parent functioning by promoting protective factors. Since the program's inception, *Circle of Parents*' wide use of fathers-only groups has been a unique approach, setting the program apart from other parenting groups. Although *Circle of Parents*' groups have been widely implemented in the United States, the efficacy of this program has not been rigorously evaluated. The California Evidence-Based Clearinghouse for Child Welfare currently rates the program as "NR" or "not able to be rated" due to the lack of research on the model.

Circle of Parents grew from the 1999 National Family Support Roundtable, which was a coalition of statewide and regional organizations. In 2000, this group, in partnership with Prevent Child Abuse America, won an Office on Child Abuse and Neglect grant to develop a national network of parenting support groups. The coalition was awarded a multiple-year federal appropriation in 2001, administered by the Office on Juvenile Delinquency and Prevention to expand programs for underserved communities and populations, such as families of young, African American children. Both funding streams provided *Circle of Parents* the capacity to develop and implement state-level program networks. Today, the national network includes 19 statewide organizations.

As compared with other parenting interventions, the *Circle of Parents* model has several notable advantages. First, the peer-support group format is a lower-cost approach both in terms of program costs and participant burden.[38] Compared with other parenting programs, the *Circle of Parents* model does not include time-consuming activities such as weekly homework assignments, home visits, counseling sessions, and phone check-ins that can appear burdensome to participants. Second, although the *Circle of Parents* model is standardized and explicitly detailed in the program manual (i.e., *manualized*), the model is flexible and can be tailored to the needs of the fathers. In North Carolina, all facilitators participate in a training provided by nationally certified staff from Prevent Child Abuse North Carolina. A facilitator manual is provided that includes information about the essential elements of the program, a guide to group facilitation, and resources regarding content and topics for group meetings. Last, the focus on a group of peers with a trained facilitator emphasizes that the program provides a private space and open environment for sharing, which fosters trust between participants, and in turn, generates social capital beyond the intervention setting.[39]

The National *Circle of Parents* Network developed the following standards for *Circle of Parents*: groups should be founded on principles of mutual self-help and support; be led by a trained group facilitator and parent leader; be confidential, non-judgmental, ongoing, and inclusive; be convened weekly, at no cost to participants, and should provide no-cost children's programming or care. Program objectives include reducing parent isolation, building parent self-esteem and confidence in parenting roles, and reinforcing positive parenting. Parent leadership within the group and community is a fundamental component of the program.

Evaluation data provided by Prevent Child Abuse-North Carolina (PCA-NC) from 2014 suggested positive trends for families participating in *Circle of Parents* in the North Carolina (NC) network.[40] Pre/post assessment

for 417 families served in 47 groups included 12.7 percent fathers. Assessment results from the Protective Factors Survey (PFS) indicate a significant improvement in fathers' reported social emotional support (before *Circle of Parents* = 4.59, today = 6.17; $p < .01$) as well as other PFS domains.[40]

Implementation Support by Prevent Child Abuse-North Carolina (PCA-NC). *Circle of Parents* programs in NC receive implementation support through a partnership with PCA-NC, the state-coordinating agency. Ongoing support and technical assistance is critical not only to delivering a manualized intervention with fidelity but also to supporting evaluation research. In 2010, PCA-NC partnered with the UNC Injury Prevention Research Center to develop internal quality assurance strategies for *Circle of Parents*, including standardized data collection across the state network. During 2006–2011, North Carolina was one of 13 states to participate in the *Circle of Parents*' fatherhood project *Partners for Kids*. Funded by the Responsible Fatherhood Demonstration Program (Administration for Children and Families), this project developed partnerships with home-visiting programs to engage fathers in *Circle of Parents* and build program capacity to serve fathers.

PCA-NC provides members of the NC *Circle of Parents* Program Network with pre-implementation support, training, technical assistance, coaching, and evaluation support. Pre-implementation support includes working with communities and organizations to improve their ability to successfully implement the program with fidelity to the model. PCA-NC staff includes nationally certified *Circle of Parents* trainers who provide pre-service training and ongoing skill-building training for local program facilitators and participants.

A.6 WAGES Head Start Father Initiative

WAGES has been Wayne County's Community Action Agency since 1966. Currently, WAGES's school-readiness services are delivered through seven Head Start/Early Head Start (HS/EHS) centers throughout Wayne County. WAGES also provides programs to promote economic self-sufficiency, nutrition and food security, senior companionship, and home-visiting programs. WAGES has a history of stable, consistent funding largely from federal and state sources, including the Community Services Block Grant. WAGES has provided *Circle of Parents* fathers-only groups with some consistency since 2003, as part of its Fatherhood Initiative.

Since 2001, WAGES's Fatherhood Initiative program has served young, low-income fathers and their children served by HS/EHS. In addition to *Circle of Parents*, WAGES offers other Fatherhood Initiative services such as father-child activities, parenting education, educational and employment resources, and case management with priority for fathers of children receiving HS/EHS services. The WAGES Fatherhood Initiative has served an annual minimum of 70 fathers of young children.

A.7 Aims of the Current Study

Arguably, the greatest challenge facing fatherhood programs is keeping fathers engaged with services. Documented "lessons learned" have explored successful recruitment and retention of fathers.[8,14,15,17] However, more research is needed to test the assumptions of programs like *Circle of Parents* that are designed to reduce participation barriers. For example, the flexible scheduling of group meetings during evenings/weekend hours enables working fathers to participate during their limited free time. Additionally, separate fathers-only services provide a safe environment for young fathers to learn how to effectively co-parent with their child's mother, regardless of their relationship status, and to normalize parenting struggles in a non-judgmental setting. Further, although research has suggested specific strategies to recruit and retain fathers (e.g., targeted advertising, transportation support, and other incentives), we need to know much more about why fathers enter and leave parenting groups.[8] Thus, the **first aim of this study was to explore recruitment, engagement, and retention of young, low-income fathers in a parenting group**.

Recent efforts to strengthen training and technical assistance throughout the national *Circle of Parents* network have greatly improved adherence to model fidelity, clarified key components of the logic model, and built the capacity to conduct a rigorous evaluation. Based on encouraging results from state evaluations, the Centers for Disease Control and Prevention and others have recognized the program's potential benefit. However, the peer-reviewed research is not yet sufficient to assess *Circle of Parents* as an evidence-supported intervention for fathers. Although promising, existing evaluations are limited by relatively weak study designs; specifically, the reliance on single-group retrospective self-report surveys.[39,40] Thus, the **second aim of this study was to address this significant gap in knowledge and to focus on rigorous evaluation of the fathers-only program effects of *Circle of Parents***.

The primary outcome measure examined in this study is father's self-reported level of social support. This outcome was selected based on the theory of change for the *Circle of Parents* model and also for consistency with prior studies of *Circle of Parents*.[39,40] Additional secondary outcomes examined include parenting protective factors, parenting self-efficacy, parenting stress, child-parent relationship, fatherhood commitment, and fatherhood engagement. In addition to the opportunity to build social connections with other fathers, the *Circle of Parents* model includes parent education and other opportunities to achieve goals related to father involvement. As fathers gain additional knowledge and skills related to parenting, within a supportive social group environment, we hypothesized that participation in *Circle of Parents* would be associated with gains in these outcomes as well. The following section describes the methodology and measurement approach in greater detail.

Circle of Parents participants at Wayne Action Group for Economic Solvency (WAGES).

B. Methods

B.1 Study Design

The study was conceptualized and designed as a community-based randomized controlled trial to compare outcomes of fathers participating in *Circle of Parents* with fathers in a services-as-usual waitlist control group. Because they had a child enrolled in Head Start, all fathers in the study were eligible for additional Head Start services as part of the WAGES Fatherhood Initiative. Fathers were randomly assigned on a rolling basis to the control condition with the intention of creating a waitlist for entry into the *Circle of Parents* groups following study completion as space allowed. Although there is no specific number for the size of such groups, consultation with experts in the model suggested having a pool of at least 20 to 25 fathers at any point such that 10 to 15 would attend during any given week.

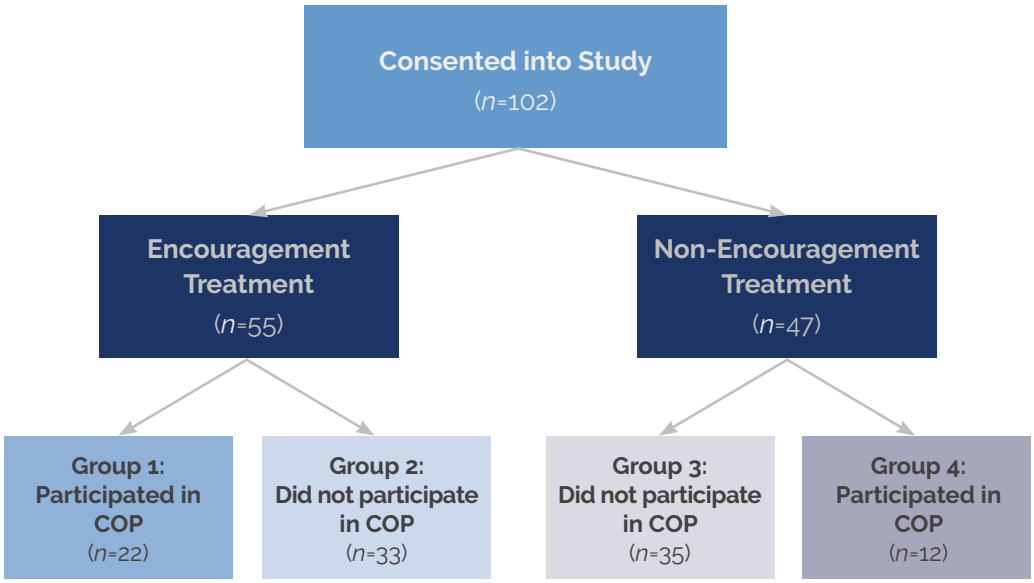
We developed an experimental design because we wanted to use the strongest and most rigorous design possible to identify the causal effects of *Circle of Parents* on the identified outcomes. As we progressed, however, a number of unanticipated challenges to adhering to that design emerged. One was an inability to anticipate and plan for attendance each week given the open-ended format of the program which enabled fathers to join and leave at any point. Another was our inability to fill the weekly groups with fathers assigned to the treatment condition due to lower than expected attendance. Week after week, the groups were very sparsely attended. A third challenge was our inability to maintain a "waitlist" control group comprised of fathers who could not be genuinely accommodated in the treatment group due to excess demand for Circle of Parent services. Given the practical and ethical difficulties associated with "turning away" fathers who wanted to participate in the program when we had abundant space to serve them, our team did not turn away any fathers from the waitlist group who wanted to attend meetings. Since many fathers in our study did not reach the "treatment" to which they were assigned randomly and the original experimental design was compromised, we used quasi-experimental statistical methods to estimate the effects of the program.

This project sought to preserve the confidential nature and peer-support aspects of the mutual aid program. For this reason research staff did not observe group meetings and were not involved with determining who could attend group meetings. Attendance was logged at each meeting and tracked by project staff. The random assignment protocol was not adhered to because so few fathers in the experimental group attended and because the agency staff decided they could not turn people away. Ultimately, 12 of the 47 fathers recruited for the control condition attended at least one program session. The research team was primarily involved with study design, data collection, and analysis and did not observe group meetings to ensure confidentiality.

WAGES program staff and the UNC research team performed distinct but collaborative functions to accomplish the aims of this study. WAGES, specifically the program facilitator and parent leader, maintained focus on delivery of *Circle of Parents* and supported participant recruitment. The *Circle of Parents* father groups were facilitated by a trained WAGES staff member who also completed a fidelity-monitoring checklist, participant tracking, and meeting documentation. The group facilitator was a trained provider of *Circle of Parents*. Research suggests individuals from racial minority groups feel more comfortable discussing personal matters with practitioners who share the same racial background.[41] This project was fortunate to have a male African-American facilitator and parent leader who attended the weekly *Circle of Parents* groups. Two additional recruitment coordinators (also African-American males) were hired to assist with outreach and engagement activities.

Study Retention. Figure 1 presents a participant flow diagram for this study. We expected both arms of the sample would have some unavoidable attrition due to changes in participants' circumstances. We implemented several research-informed engagement strategies to maximize program retention.[17,42] The research team worked to build rapport and trust with all participants by making initial contact and conducting the interviews. The projects' affiliation with WAGES and the support of leaders of this trusted service provider was an important asset for increasing retention.[42] The WAGES facilitators and members of the research team called fathers in the treatment condition one to two days before the first session and after any missed sessions; social media was used to communicate meeting reminders to participants. *Circle of Parents* provides weekly meetings but does not have a specified dosage level and participation is open-ended. To reduce participation barriers related to employment, facilitators attempted to accommodate work schedules, including holding sessions and engagement events in the evenings and on weekends.

Figure 1. Participant Flow through WAGES-UNC Circle of Parents (COP) Study



B.2 Sample and Recruitment

Participants were recruited from WAGES, the Community Action Agency in Wayne County, North Carolina. Recruitment began in April 2015, with the study team introducing the project to WAGES staff at six local Head Start centers served by WAGES. A recruitment brochure was developed and used to communicate the aims of the study and eligibility for recruitment. In addition, informational handouts were prepared for WAGES staff describing the process for referring fathers to the study by contacting the father involvement coordinator or a member of the study team.

Many efforts were made to recruit fathers into this study and encourage participation in the intervention. Passive recruitment efforts (e.g., brochures in the lobby, communications to all parents) did not yield interest. Thus, we developed active recruitment strategies that centered on employing three "recruitment coordinators" from the target population to make direct appeals to fathers. These recruitment coordinators, along with the study team, consistently targeted the Head Start centers' drop-off and pick-up times of the day and attempted to approach any male who entered the Head Start centers. After several weeks, this approach was successful in recruiting fathers for the study. Interested fathers were screened for eligibility (criteria described below), received information about informed consent, and could participate in the baseline survey at the same time. Recruitment ended in November 2015.

Study participants were fathers of young children (0–5 years) receiving HS/EHS services. Table 1 provides information about the demographic background of fathers in the study, comparing the four subgroups based on random assignment, then on self-selection to intervention or no intervention. WAGES serves an area with a high proportion of African-American residents (Wayne County 32%, City of Goldsboro 54%); therefore, our sample also included a high proportion of African-American fathers (84%). The age of fathers ranged from 19 to 66 years (M = 32, SD = 11). The majority (77%) of fathers stated that they currently resided with the target child at baseline and 53 percent reported more than three children currently resided in their house. Of the fathers in the sample at baseline (N = 102), about 16 percent had less than a high school degree, 46 percent had a high school degree or GED, and 38 percent had at least some college. Only 62 percent of fathers responded that they had worked

at least 20 hours per week over the past six months. At baseline, only 52 percent reported having a steady job. About a third (34%) of fathers reported receiving less than $5,000 in the past year from any source. Differences between fathers who participated and did not participate are discussed later in this report.

Recruitment and Informed Consent. Consent procedures were reviewed and approved by the UNC Institutional Review Board. Next, the UNC research team met with WAGES staff to review the study design and to provide training in the recruitment protocol. Family service coordinators at WAGES were asked to initiate recruitment by distributing a brochure to clients that described the study's purpose and participation requirements. If clients were interested in participation, the WAGES staff obtained contact information and permission to be contacted by the research team. The principal investigator was in regular contact with WAGES staff to facilitate recruitment efforts. Study inclusion criteria included:

- father or father figure of at least one child receiving or entering WAGES Head Start services (the "target child" may/may not be residing with the participant),
- able to speak and read English, and
- at least 18 years old.

Randomization and Remuneration. Following consent and baseline data collection, we used random assignment procedures to assign the fathers to either the treatment condition, which received the *Circle of Parents* program, or the waitlist control condition, which received services as usual. Fathers were randomly assigned to treatment conditions using block randomization using random permuted block sizes of four, six, and eight participants. The randomization computations were performed using SAS PROC PLAN. We began the study with a block of four fathers assigned to the treatment condition so that the group would have a sufficient number of fathers to begin meeting. Fathers entered the group on a rolling basis. To recognize the time involved with study participation, fathers initially received $20 gift cards for each of the assessments (baseline and six-month follow-up). Later, to improve recruitment, we increased the incentive to $40 gift cards. To incentivize group participation, fathers in the treatment group were entered into a monthly drawing for an additional $20 gift card. Refreshments were also provided at each group session to encourage participation and several special events (e.g., movie night, bowling night) were planned to improve recruitment and engagement.

Randomization occurred after the participant completed the baseline survey. Participants in the treatment group were contacted by a member of the study team and invited to attend the first weekly meeting. They then received reminder calls and texts each week encouraging them to attend the weekly meetings. To provide additional incentives for engagement, monthly drawings were held at the last *Circle of Parents* meeting of the month for participants to receive a bonus gift card. Participants received an entry for each meeting they attended that month, and the entries were put in a hat, and one was randomly selected.

Following the baseline survey, participants randomized to the comparison condition were contacted to notify them that they were on a waitlist and would be eligible to attend group meetings after the follow-up survey was completed and they were no longer in the study. The comparison group received no reminder calls or any encouragement contact to attend *Circle of Parents* meetings. However, as discussed earlier, program personnel did not turn away fathers from open meetings. Twelve members of the comparison group who were waitlisted to receive services after the study was completed, actually attended at least one *Circle of Parents* session. This condition switching is discussed further below. Table 1 provides a description of the study sample across the study groups. The groups are compared across baseline demographic measures using bivariate chi-square tests.

Table 1. Baseline Descriptive Measures Comparing the Four Groups Resulting from the Randomized Encouragement Design and Self-Selection into the Intervention

	Treatment		Comparison		
	Group 1 (*n*=22)	Group 2 (*n* =33)	Group 3 (*n* =35)	Group 4 (*n* =12)	*p*
	%	%	%	%	
Education					0.79
<High school/GED	13.6	24.2	11.4	8.3	
High school/GED	45.5	39.4	51.4	50.0	
Any college	40.9	36.4	37.1	41.7	
Race					
African-American	88.4	81.8	85.7	75.0	0.43
White	13.6	15.2	8.6	8.3	
Other	0.0	3.0	5.7	16.7	
Ethnicity (non-Hispanic)	95.5	87.9	94.3	75.0	0.42
Marital status					0.53
Single	63.6	66.7	65.7	58.3	
Married – child's mother	22.7	27.3	14.3	16.7	
Married – not child's mother	13.6	6.1	20.0	25.0	
Currently living with child's mother (yes)	31.8	57.6	40.0	66.7	0.07
Relationship status with child's mother					0.40
Romantically involved	40.9	60.6	45.7	58.3	
On/off again	0.0	3.0	14.3	8.3	
Just friends	36.4	15.2	14.3	8.3	
Rarely talk	9.1	6.1	10.4	0.0	
Present for child's birth (yes)	77.3	72.7	88.6	75.0	0.69
Reside with child (yes)	72.7	75.8	68.6	83.3	0.84
Responsibility for raising child					0.31
None	0.0	0.0	0.0	0.0	
A little	0.0	0.0	2.9	0.0	
Some	13.6	15.2	17.1	25.0	
A lot	86.4	84.9	80.0	66.7	
Annual income					0.19
<$5,000	18.2	24.2	42.9	41.7	
$5-20,000	50.0	27.3	31.4	25.0	
>$20,000	31.8	48.5	25.7	33.3	
How often have you had a paid job (past 6 months)?					0.06
All of the time	54.6	66.7	60.0	33.3	
Half-Most of the time	4.6	9.1	14.3	41.7	
Never-Less than half of the time	40.9	24.2	25.7	25.0	
Current occupation status					
Work in a steady job	36.4	53.1	68.6	33.3	0.05
Work in a non-steady job	9.1	12.1	8.6	16.7	0.86
Unemployed	27.3	15.6	2.9	25	0.05
Stay at home dad	18.2	6.3	2.9	16.7	0.16
Looking for work	18.2	21.2	5.7	33.3	0.11
Military	4.6	3.1	0	0	0.59
School	9.1	3.1	5.7	8.3	0.83
Disability/leave	13.6	6.3	5.7	8.3	0.72
Financial security ("At the end of the month do you usually have . . .")					0.57
Some money left over	40.9	60.6	51.4	33.3	
Just enough	40.9	24.2	28.6	25.0	
Not enough	13.6	6.1	14.3	25.0	
# Children in father's house					0.86
0	13.6	6.1	17.1	8.3	
1	36.4	33.3	34.3	33.3	
>1	50.0	60.6	48.6	58.3	
Child sex (female)	63.6	53.1	57.1	83.3	0.35
Child age (<2 years)	31.8	15.2	14.3	33.3	0.23

Note: Group 1 = Treatment, participated in Circle of Parents; Group 2= Treatment, did not participate in Circle of Parents; Group 3 = Control, did not participate in Circle of Parents; Group 4 = Control, participated in Circle of Parents.

Our assessment strategy used a multi-method approach with repeated measures. We collected data at two time points via a secure self-administered survey delivered using a tablet computer with Qualtrics software. The computerized interview resided on a protected university server and was distributed to the study tablet computer for data collection in the field. Data stored on the tablet was uploaded daily to the server database upon collection and deleted from the tablet.

Description of the Intervention. As part of a broader array of parent engagement and father involvement services, WAGES provided *Circle of Parents* groups weekly to fathers. This model is described in more detail in the introduction. Generally, the model consists of weekly group meetings that are led by a trained facilitator and a parent leader. *Circle of Parents* has no set curriculum, and the facilitator/parent leader solicit ideas for topics from group members. In this study, the facilitator was the WAGES male involvement coordinator who was trained by PCA-NC in the *Circle of Parents* model. The parent leader was a highly involved father of a child enrolled in WAGES Head Start and active family advocate in the community. Each meeting began with a specific opening and closing statement that consisted of positive affirmations about fatherhood and parenting. Once a month, WAGES offers a combined co-parenting group for males and females, and therefore, during that week, the father's *Circle of Parents* groups tended to focus on themes related to co-parenting. Otherwise, the topics were generated based on interest of attendees, from which the facilitator developed general outlines for weekly discussions. In addition to the weekly groups, several special events were planned, largely to attract new members, that included movie nights, dinners, cookouts, and a bowling night. To recognize their efforts to participate and promote group bonding, at the end of each month, the groups recognized the fathers who attended that month and celebrated birthdays. Consistent with the model, groups had a guest speaker at one meeting who spoke about different parenting styles, and a motivational speaker at another meeting who spoke about preventing partner violence. The facilitator documented the group meeting topics each week. In general, groups were flexible in order to address individual needs or situations. The following list provides examples of some of the themes or topics that were discussed at the meetings during the course of this study:

- Health and nutrition, cooking healthy for your child.
- Loving your child (positive parenting strategies).
- "Old to the new" (learning from one's experience as a child to apply to how they want to parent).
- Inexpensive family activities.
- Strengthening your family, enhancing relationships in your family.
- "Talking the talk and walking the walk" (following through on parental responsibilities).
- Building relationships (as "head of the household," what is your role and your responsibility; leading through relationships, not authority).
- "Identifying your gift" (all fathers have strengths, what are you bringing to the table).
- "Working it out" (exercise as a group, positive self-care).
- "Ready, set, goals" (how to establish goals as a parent, then checking in each week on the goals).
- "Converting a mess into a message" (learning from mistakes and helping others based on what you have learned).
- "Take off the mask" (exploring the "macho" façade and expectations about men, how does that get in the way of being a father and not being weak).
- "Man up" (taking responsibility for raising children, translate to everyday activities).
- Learning to trust others (getting help from others in the group and others in the community).
- "Do you feel my pain?" (Learning to express emotions, getting real).
- "Men in action" (activities that you can do with your kids depending on their age group).

B.3 Measurement

This study obtained data from three sources. Fathers completed 102 pre-test baseline surveys, 66 post-test follow-up surveys, and 12 mid-point qualitative interviews. We also collected administrative records for the father and the child. Surveys were collected in-person using offline survey software delivered via tablet at the Head Start center serving as the study site. A paper version of the survey was also available, but used in only two cases. In addition to participant demographics, the baseline survey included several measures of specific outcomes that we expected would change following participation in the program. In the computerized survey, participants were asked to report on several items related to the socioeconomic status and background information for the father and his target child, such as age, race/ethnicity, occupation, education, income, relationship status, and father's residential status relative to study child. To measure outcomes, the study primarily used standardized instruments related to the key constructs of interest in the study, namely social support and father–child relationship. Table 2 presents a list of the measures used in this study, item ranges, and internal consistency reliability.

Standardized Measures. The main outcome measure for this study was the **Protective Factors Survey** (PFS). The PFS was developed as a single instrument to assess the five protective factors identified through the Strengthening Families Initiative using a strengths-based approach to reframe child maltreatment prevention.[43,44] The PFS subscales and internal consistency reported by the developers include the following: family functioning/resiliency (5 items; $\alpha = 0.93$); social/emotional support (3 items; $\alpha = 0.87$); concrete support (3 items; $\alpha = 0.93$); nurturing and attachment (4 items; $\alpha = 0.87$); and child development/knowledge of parenting (5 items; $\alpha = 0.19$). Confirmatory factor analysis, a methodology used to assess the underlying factor structure of a measure, confirmed the poor reliability of the child development/knowledge of parenting subscale, but showed alphas of the other four scales ranging from $\alpha = .74$ to .92.[44] The social emotional support domain—the focus of the current study—was defined as "perceived informal support from family, friends, and neighbors that helps provide for emotional needs." Participants responded using a 7-point Likert scale (strongly disagree to strongly agree) and the three items that measured social emotional support in the PFS were:

1. I have others who will listen when I need to talk about my problems.

2. When I am lonely, there are several people I can talk to.

3. If there is a crisis, I have others I can talk to.

The PFS was augmented with several other instruments to assess program effects. To examine the possible impact of the *Circle of Parents* program on child development, the **Parent Evaluation of Developmental Status** (PEDS) measure was collected.[45–47] The PEDS is a 10-item, parent-report child development measure that was standardized and validated using a national sample of over 37,000 children between ages 0 to 8 years. In these studies, the PEDS was found to be highly correlated with child intelligence, language, academic achievement, and behavior. Most important, the scale has good sensitivity to detect developmental problems in children 0–8 years (74–79%), as well as good specificity (70–80%). Reliability studies indicate good test-retest reliability (88% agreement after two weeks follow-up) and good internal consistency ($\alpha = .81$). The PEDS items ask parents to respond using a 3-point scale with response options of *Not concerned*, *Concerned*, or *A little concerned* to a series of statements such as "Do you have any concerns about how your child behaves?" and "Do you have any concerns about how your child is learning preschool or social skills?"

To assess the father–child relationship, we used the **Child–Parent Relationship Scale** (CPRS).[48,49] The CPRS was adapted from the Student Teacher Relationship Scale; the CPRS is a 16-item self-report measure that includes summed subscales for conflict and closeness.[50] The eight-item conflict subscale measures a parent's feeling that his or her relationship with their child is characterized by negativity (α = .80 for fathers at child age 4 years). The seven-item closeness subscale measures the parent's feeling of warmth, affection, and open communication with their child (α = .72 for fathers at child age 4 years). Validity of the CPRS was established using structured videotaped interactions of 499 parent–child dyads coded by trained observers. The CPRS closeness scale was highly correlated with observer ratings of supportive presence, sensitivity, and positive caregiving. CPRS conflict scores were correlated with observer-rated parent hostility.

We measured parenting efficacy (the feeling of competence in a parenting role) using the **Parenting Self-Efficacy Scale** (PSE), developed by the FRPN.[51] The PSE consists of seven items in which fathers were asked to rate their level of agreement using a 5-point Likert scale (strongly disagree to strongly agree). Items are summed to indicate higher levels of perceived self-efficacy as a parent (α = .86). Examples of items include "I am good at knowing what activities my child enjoys" and "I am good at understanding what my child wants or needs." To measure aspects of participant commitment to the role identity related to fatherhood and their satisfaction with their role as a father, a measure of **Fatherhood Commitment** was used. This measure was developed by FRPN and adapted from existing parenting scales to explore theoretical concepts of father role salience, satisfaction, and commitment.[52,53] Twelve items using a 3-point Likert scale ask fathers to indicate their level of agreement with statements such as "I like being known as a father" and "I think spending time with my child is fun."

Fathers' emotional well-being was assessed using two self-report measures. First, depressive symptoms were measured using the **Center for Epidemiological Studies-Depression Revised Scale** (CESD-R), a widely used 20-item screening test for depression and depressive disorder.[54] Participants were asked to indicate how often during the past week they had felt a particular way (e.g., "I felt depressed", "I was tired all the time") using a 5-point scale (*Not at all* or *less than one day* = 0; 1–2 days = 1; 3–4 days = 2; 5–7 days = 3; and *Nearly every day for 2 weeks* = 4). The CESD-R has shown good internal consistency reliability in studies of fathers of school-aged children (α = .91) as well as with fathers of infants (α = .82).[55,56] Since the CESD-R screens for depression and asks fathers specifically about suicidal thoughts, a protocol was developed to alert the research team if a father endorsed responses that suggested high risk for depression or suicidality. The notification protocol had to be used for three situations at baseline. After discussion with agency staff about concerns regarding screening for depression at baseline, we decided to remove the measure from the follow-up assessment. Therefore, father depression was measured only at baseline.

Second, parenting stress was measured using the **Parental Stress Scale** (PSS).[57] The PSS is an 18-item measure that asks respondents to indicate their level of agreement with statements regarding their feelings and perceptions of experiences as a parent (e.g., "I am happy in my role as a parent," "I enjoy spending time with my child").[57] The reliability and validity of the PSS was examined in a large sample of parents and showed good test-retest reliability and internal consistency (α = .83), and was correlated with another established measure of parenting stress (r = .75). PSS scores for fathers were also significantly correlated with measures of loneliness (r = .46), anxiety (r = .51), and social support satisfaction (r = -.34).[57]

In addition to measuring the amount of time fathers spend with their children, it is critical to assess both the quality and type of father–child involvement. To assess these dimensions of father involvement, we included items related to frequency of father–child contact as well as the **Father Engagement Scale** (FES). When the current study was being fielded, the FRPN was in the process of further refining the FES, which

at the time consisted of 31 items if the father's child was one year or younger, and 60 items if the child was one to five years old. Since the start of this study, the FRPN has developed final versions of these scales with fewer items and identified two subscales for each scale. The analyses presented in this report represent this updated measurement protocol. For children younger than 1 year old, the FES has an eight-item caregiving/play subscale, and a three-item cognitive stimulation subscale. For fathers of children between one and five years old, the FES consists of a seven-item caregiving/play subscale and a three-item support subscale. All items use the same 5-point response scale that asks the participant to describe how often during the past month they have engaged in a specific activity (e.g., "Put your child to sleep," "Read with your child").

To assess whether stigma affects program engagement, the **Adapted Stigma Scale for Receiving Psychological Help** (SSRPH) was used. The original SSRPH is a five-item scale used to measure the perception of public stigma toward engaging in psychological help-seeking.[58] Participants respond to items using a 4-point Likert scale (*strongly disagree* to *strongly agree*). The total score is calculated by summing the individual items (range 0 to 15) with higher scores indicating higher levels of perceived social stigma associated with receiving help. Experts assessed content validity of the SSRPH and exploratory factor analysis was used to establish the single-factor solution.[58] The single-factor structure was replicated in a study of adolescent girls.[59] Construct validity was supported by a significant negative correlation with a measure of attitudes toward seeking professional help. Prior studies have reported good internal consistency of the SSRPH in samples of university students (α = .72), adolescent females (α = .80), and adults with history of mental illness (α = .82).[58,60,61]

This study used an adapted version of the SSRPH, which was administered to fathers. Instrument modifications included a brief statement regarding the meaning of "stigma" and the addition of father-specific language to each item (e.g., "Seeking help or advice for problems *related to being a father* carries social stigma"). Internal consistency reliability and confirmatory factor analysis indicate psychometric support for the scale. Detailed information about the adaptation of the SSRPH and initial psychometric properties in the current study are available.[62]

Administrative Data. In addition to the survey data, administrative records were compiled from the Head Start agency regarding the fathers in the study and their target child. These records included the father's Head Start volunteer information, the *Ages and Stages Questionnaire* (ASQ, ASQ-SE) for the target child, and the *Teaching Strategies GOLD* child assessments. Head Start volunteer information included the number of hours in the classroom, extracurricular activities, and service on parent committee meetings. The ASQ is used to identify infants and young children who need further evaluation or who might require services for developmental delays or disorders.[63] The ASQ assessment begins at four months of age and addresses five developmental skill areas: communication, gross motor, fine motor, problem solving, and personal-social. After scoring, children less than two standard deviations below the mean are considered in need of evaluation. In this analysis, children were identified as having problem-range scores or not based on administrative records collected by WAGES prior to (based on assessment at a pediatric office) and during enrollment in Head Start services.

Teaching Strategies GOLD is a proprietary classroom assessment tool used by WAGES HS/EHS to track knowledge, skills, and behaviors related to each child's learning progress. The ongoing assessment is based on 38 objectives observed by the teacher that are predictors of school readiness. The areas of development used for this study were socio-emotional, physical, language, and cognitive development. Ten-point scaled scores created by the assessment developers were used for the analysis, and technical documentation suggests strong reliability and validity.[64,65]

Table 2. Standardized Measures Collected as Part of the Baseline Survey, Including Internal Consistency Reliability for the Current Study

	# Items	Internal Consistency (α)	Min	Max
Parents Evaluation of Dev. Status	10	.868	0.0	10.0
Protective Factors Survey				
Family Functioning/Resiliency	5	.875	2.4	7.0
Social-Emotional Support	3	.885	1.0	7.0
Nurturing Attachment	4	.782	4.3	7.0
Concrete Support	3	.705	1.0	7.0
Child Development/Knowledge of Parenting	5	.493	3.4	7.0
Child-Parent Relationship Scale				
Closeness	7	.818	20.0	35.0
Conflicts	8	.777	4.0	32.0
Parenting Self-Efficacy	7	.978	7.0	35.0
Fatherhood Commitment	12	.596	18.0	36.0
Parental Stress	18	.904	15.0	64.0
Stigma for Receiving Help	5	.785	1.0	2.8
Depressive Symptoms	20	.889	0.0	37.0
Father Engagement				
<1 Play	8	.964	8.0	64.0
<1 Cognitive Stimulation	3	.871	2.0	24.0
>1 Play	7	.791	6.0	38.0
>1 Support	3	.799	3.0	14.0

Individual Interviews. Fathers assigned to the treatment group were invited to participate in interviews during regular phone call updates. A brief, semi-structured interview guide was developed to explore what factors facilitate or pose barriers to the participant's engagement in fatherhood services. The interview guide consisted of open-ended questions with follow-up prompts. The interview with individuals who had attended a group meeting also inquired about the participant's perceptions of *Circle of Parents* and their perceptions of changes in their parenting skills, knowledge, and involvement. The UNC research team conducted the interviews at WAGES in a conference room or open office at approximately the midpoint of the study. At this point in the study, all fathers had had numerous opportunities to attend meetings and had been regularly encouraged to participate. Interviews were scheduled at times that were convenient for fathers. The interviewer recorded participant responses verbatim to standard questions (e.g., "Were there any barriers or anything that stopped you from getting involved with *Circle of Parents* initially?").

B.4 Analysis

Data management was primarily accomplished using shared, password-protected Excel spreadsheets. All data analyses were conducted using SAS v9.3. Several techniques were used to test outcomes; however, we first examined univariate and bivariate statistics using descriptive statistics. First, frequencies and means were calculated to determine the demographic characteristics of the sample and to examine correlations between measures.

Bivariate statistics (t-tests, ANOVA, correlations, chi-squares) were used to test associations between baseline demographic variables, program engagement, and outcome variables. Logistic regression was used to predict program engagement. Last, analysis of covariance (ANCOVA) was used to test effects of the intervention. Missing data were handled using listwise deletion.

Based on the *What Works Clearinghouse Procedures and Standards Handbook, Version 3.0*, study attrition at the follow-up was in the acceptable range.[66] Despite many efforts to contact fathers and a financial incentive, about one-third of fathers (35%; 36 of 102) did not participate in the follow-up survey. The differential study attrition was balanced across the randomized groups with 36 percent of the treatment condition lost at follow-up compared with 31 percent of the comparison group (differential attrition = 5%). The attrition of study participants yielded missing outcome data and all results represent complete case analysis.

The study initially followed a standard intention-to-treat analytic approach, meaning that all individuals randomized would be included in the analysis regardless of issues such as nonadherence, noncompliance, attrition, missing data.[67] In addition to the intent-to-treat analysis, quasi-experimental methods were used to address the potential bias related to self-selection and noncompliance. Because fathers who chose to participate in groups were likely different from fathers who did not participate, findings might reflect these differences and not the effects of the intervention itself. Propensity score analysis was used to balance groups and mimic a true experimental design. There are many approaches that are subtypes of propensity score analysis (e.g., matching, stratification), but this analysis used two approaches that are appropriate for smaller sample sizes: propensity score covariate control and propensity score weighting.[68] All of these approaches operate under the same premise and general approach. First, the propensity score is estimated by modeling the likelihood of group membership using available baseline covariates (the selection model). In this case, a logistic regression model was estimated to predict which participants ever attended a *Circle of Parents* group (the treatment) knowing that participation was non-random. A posterior probability of treatment, or the propensity score, is then used in subsequent analyses to reduce the selection bias. Given adequate overlap of the propensity score, this method substantially reduces such bias. For propensity score weighting, participants were weighted by the inverse probability of receiving the treatment that they actually received. The weights were then used in weighted ANCOVA models.

Analysis of Semi-Structured Interviews. Detailed notes from the semi-structured interviews were analyzed using content analysis and an inductive approach to develop meaningful categories. Key ideas and recurrent themes were identified through multiple reviews of the data. The notes from the interviews were divided evenly between two members of the study team and themes were crosschecked between the researchers.

C. Results

The following sections explore the results for the analyses addressing the two aims of the study. Although the "condition switching" that occurred in this study limits our ability to make causal claims about the intervention effectiveness, the occurrence of condition switching provides an opportunity to examine the causal effects of encouragement on program engagement. In other words, random assignment determined which fathers received weekly encouragement to attend the group meetings, but self-selection also influenced which fathers received the intervention. Therefore, the results first explore the question, *Was weekly encouragement associated with program participation?* The second question explores, *What factors are associated with program participation, after controlling for encouragement to participate?* Note that in some cases, control variables and non-significant variables were included in models but are not listed in the table in the interest of space.

C.1 Aim 1 Results: Engagement in *Circle of Parents*

Recruitment and enrollment in the study occurred on a rolling basis. Group meetings were held year-round and occurred weekly, with a few exceptions for holidays and other scheduled agency events. The first participants provided consent and began attending meetings in April 2015. The last participant was consented into the study in November 2015. Follow-up data collection occurred in May/June 2016. Therefore, there was a varying period of possible "exposure" to the intervention depending on when the participant entered the study relative to the end date of the study (7–13 months). The first participant could attend a total of 57 possible *Circle of Parents* meetings, whereas the last enrolled participant could attend a total of 33 possible meetings during the course of the study. On average, participants were eligible to attend 42.5 meetings during the study period.

Table 3. Description of the Study Sample for Key Demographic Characteristics Comparing Randomized Encouragement Conditions

Variable		Non-Encouragement Control (*n*=47)	Encouragement Treatment (*n*=55)
Father age (years)		31.9	32.7
Child age	<1 year	43%	57%
Father education	No high school	10%	20%
	High school	52%	41%
	Some college	38%	38%
Father race	African-American	83%	84%

Effects of Encouragement. Table 3 provides a basic description of the randomized encouragement groups and an indication of the demographic balance between the treatment and comparison groups. Assuming random assignment (i.e., treatment and comparison group were balanced on observed and unobserved variables), examining the association between baseline assignment and program participation should give an unbiased estimate of the effects of weekly encouragement. First, examining engagement as a dichotomous indicator (participant did/did not attend a meeting), a bivariate chi-square analysis was used to explore this association. As shown in Table 4, out of 55 encouragement group participants, 22 (40%) attended at least one *Circle of Parents* meeting. Out of 47 non-encouragement control group participants, there were 12 (25%) that attended at least one *Circle of Parents* meeting. This was not a statistically significant difference between the groups (X^2 (1, N = 102) = 2.38, p = .12). This finding indicates that treatment and comparison groups were equally likely to have attended at least one meeting. Further, total meetings was categorized into five groups identified in Table 5. These categories were created to have an equal number of participants in each category. In the treatment condition, three fathers (6%) attended between five and nine meetings and six fathers (11%) attended 10 or more meetings. These six fathers had a dosage ranging from 10 to 53 meetings (M = 27.8, SD = 15.3 meetings). There was no significant association between treatment condition and categorical total meetings (X^2 (4, N = 102) = 4.20, p = .38).

Engagement was also examined as a continuous indicator using the count of the total number of meetings attended by participants. The average number of total meetings was not significantly higher for the treatment group (M = 3.78, SD = 9.76) when compared with the comparison group (M = 1.42, SD = 3.76, t = -1.65, p = .10). However, given that total meetings was a highly skewed, zero-inflated indicator, a negative binomial generalized linear model was used to examine the association between treatment group and total meetings. These findings also indicated no significant association (β = 0.98, Wald X^2 = 3.13, p = .08). Taken together, these findings indicate that the encouragement procedures did not have a significant impact on father engagement (See Table 5). *Fathers who were randomized to receive weekly reminder contacts about meetings were not more likely to attend Circle of Parents meetings when compared to fathers who did not receive any encouragement to attend.*

Table 4. Comparing Randomized Encouragement Conditions on Actual Attendance With *Circle of Parents* Group

	Baseline Condition	
	Non-Encouragement Control (*n* =47)	Encouragement Treatment (*n* =55)
	n (%)	*n* (%)
Never attended	35 (74.5)	33 (60.0)
Attended at least 1 meeting	12 (25.5)	22 (40.0)

X^2 (1, N = 102) = 2.38, p = .12

Table 5. Comparing Randomized Encouragement Conditions on Actual Number of Meetings Attended

	Non-Encouragement Control (*n* =47)	Encouragement Treatment (*n* =55)
# Meetings	*n* (%)	*n* (%)
0	35 (74.5)	33 (60.0)
1	3 (6.4)	6 (10.9)
2–4	3 (6.4)	7 (12.7)
5–9	4 (8.5)	3 (5.5)
10 or more	2 (4.3)	6 (10.9)

X^2 (4, N = 102) = 4.20, p = .38

Factors Associated with Engagement. With these findings in mind, other baseline factors were then explored to determine what predicted program engagement, given that encouragement/reminder was not a significant predictor. Table 6 presents the findings of the bivariate comparison of program engagement with baseline predictors based on t-tests and chi-square analyses. Fathers with children younger than one year old and who were unemployed or a stay-at-home father were more likely to engage in *Circle of Parents*. Results showed a significant difference in the mean number of hours of work per week reported comparing non-engaged (M = 29.9, SD = 22.4) and engaged fathers (M = 20.7, SD = 22.0). No association was found between child age and work hours, suggesting that available non-employment time and child age were independent factors in father engagement. Although studies from other domains, such as health care, mental health, and child welfare, have found perceived stigma to be a significant barrier to service use, perceived stigma was low in this sample and was not a significant predictor of program engagement. Table 7 includes the descriptive statistics for the individual items that were adapted for this study to measure perceived stigma. Table 8 contains the results comparing engaged and non-engaged fathers on the overall stigma scale as well as baseline scores for parental stress and depression. Findings indicate that fathers did not differ in levels of stigma, stress, or depression at baseline.

Findings from Qualitative Interviews. Fathers who were randomized to the treatment condition (receiving weekly encouragement to attend sessions) were interviewed approximately three months following consent into the study. All fathers were encouraged to participate in the interviews regardless of participation in the *Circle of Parents* group meetings (i.e., those attending meetings and those not attending). Interviews were held at the agency in a private office. A group of fathers (n=12) were interviewed during a three-week period (January–February). Of these, nine of the participants (75%) had attended at least meeting and three had not attended any meetings. Fathers were asked during the interviews to describe their level of engagement with *Circle of Parents* so far. Among the nine who had attended at least one meeting, responses to this question included "excellent," "fair," and "I went to one meeting and it's been over 3 months since I came to the group." Analysis of findings identified data saturation; once saturation was reached, no additional interviews were conducted. In summary, among fathers who had attended meetings, their

opinions of the group, its function, structure, and benefit to self and family were overwhelmingly positive. Among participants who had not attended any meetings, the reported barriers to engagement were entirely logistical (i.e., work schedules, transportation) and not related to the perceived benefits of the program. The findings from these semi-structured interviews are reviewed in more detail below.

Table 6. Factors Associated with Engagement in at Least One *Circle of Parents* Group Meeting

	Not Engaged (*n*=68)	Engaged (*n*=34)	*p*
How often have you had a paid job (past 6 months)?			.22
All of the time	43 (68.3)	16 (50.0)	
Half to Most of the time	8 (12.7)	6 (18.8)	
Never to Less than half of the time	12 (19.0)	10 (31.3)	
Financial security ("At the end of the month, do you usually have . . .")			.22
Some money left over	38 (60.3)	13 (41.9)	
Just enough	18 (28.6)	12 (38.7)	
Not enough	7 (11.1)	6 (19.4)	
Child age (<1 years)	10 (14.7)	11 (32.4)	.04
Current occupation status			
Work in a steady job	41 (61.2)	12 (35.3)	.01
Unemployed	6 (9.0)	9 (26.5)	.02
Stay at home dad	3 (4.5)	6 (17.7)	.03
Hours of work per week	29.9 (22.4)	20.7 (22.0)	.05

Note: For ease of interpretation of this table, some variables categories were removed, so some Ns do not add to column totals

Table 7. Descriptive Statistics for Adapted Stigma Scale for Receiving Psychological Help (SSRPH) Items

Prompt	*M*	*SD*	Min-Max
Seeking help or advice for problems related to being a father carries social stigma.	0.95	0.85	0-3
Going to someone for help or advice with parenting means I'm not a good father.	0.49	0.63	0-2
People will judge someone negatively if they knew they needed help or advice with being a father.	0.92	0.80	0-3
If someone is getting help or advice with being a father, they should hide it.	0.64	0.65	0-3
If people knew someone was getting help or advice with being a father, they would tend to like them less.	0.63	0.62	0-2
Total Score	**3.63**	**2.59**	**0-9**

Table 8. Association Between Baseline Scales and Engagement in at Least One *Circle Of Parents* Group Meeting

	Not Engaged (*n*=68)	Engaged (*n*=34)	*p*
Stigma for receiving help	1.73 (0.50)	1.67 (0.59)	.65
Parental stress	28.47 (10.43)	25.79 (7.02)	.13
Depression	3.79 (6.03)	2.45 (4.37)	.21

First, fathers were asked how they found out about the study and the *Circle of Parents* program. Participants most frequently reported learning about the program directly from the program coordinator or another member of the study team when they were approached at the agency. Other participants reported first learning of the program at the open house orientation, at program enrollment, through word of mouth (including a former pastor), and through the brochure that was developed for the program. Fathers were then asked what made them decide to consent to being involved in the program. All fathers described some version of a perceived benefit to participation. For example, several fathers stated that they thought they would learn new ways to be involved with their children and to learn from other fathers. One father said, "I would do anything to help benefit my kids, plain and simple. I had no idea how to even change a diaper, I was practicing on dolls trying to get prepared, I needed help." Another father stated, "I didn't have a father growing up, so I thought it would be good to have those role models." Several other fathers also described that they had extra spare time and needed something to do that was worthwhile.

Participants were then asked why they had or had not participated in a group. Among fathers who reported they had not participated, they described other outside conflicts that prohibited attendance. These conflicts were specifically related to work schedule during the same time as the group meeting, and one father reported having a church commitment during the time the meetings were held.

Fathers who had attended were then asked about their initial reactions to the first meetings they attended. All seven fathers reported a positive first impression and highlighted the feedback and support he received from other fathers. One participant stated that as the youngest attendee, he did not feel that he had anything to contribute at first. However, he said that after a couple of meetings, he felt that different outlooks of being a father were helpful to him and to others. Another father said that the stories he heard from the other fathers were very inspiring and "touching" to him to learn about the other men in his community that were trying to be positive fathers. Another participant said that groups were "like going to church" for him. He stated that he felt very comfortable and could put all of his problems out on the table: "I had a lot on my heart, and there was no judgment."

All fathers were then asked about barriers to participation. Again, the timing of the meeting and conflicts with scheduling were most commonly cited as barriers. Two of the fathers also cited transportation as an ongoing issue, but not a prohibitive issue. However, most of the fathers who were able to attend said that they had no barriers to attendance. Fathers were then asked about facilitators to participation, or whether there were things that helped them stay involved. Among fathers who had participated, most said they were motivated to attend for their children, or cited a personal interest or internal desire as the biggest motivator. Several fathers reported an altruistic motivation, or the desire to help other fathers in the community. An older father said, "I just needed to do something different at this point. I don't want to live my whole life and not give nothing back." One father reported that he had recently had court appointments for child custody, and he thought that being part of the program would demonstrate to the courts that he was serious about being a better father. Several fathers reported that the text message and Facebook page were appreciated and helped them stay connected on the weeks when they were not able to attend.

Participants were then asked how they would describe their level of engagement and whether they were satisfied with their engagement. The responses varied, with some fathers reporting "fair" or "medium" engagement coupled with a desire to get more involved in the future. Other fathers said their engagement was "excellent" and were very satisfied and proud of their commitment to the program. One father reported some disappointment in himself that he was not able to get more of the fathers he attempted to recruit to get involved with the program.

Among fathers who had attended meetings, all reported that they thought they believed they had made changes in their parenting and in their involvement with their children over the past three months. When asked whether *Circle of Parents* had affected these changes, many fathers stated that they believed the program was beneficial to these positive changes. Several fathers stated that attending the meetings had helped them to feel not alone and isolated in their challenges with parenting. For example, one father said, "being involved with a group of other men who are dealing with the same types of issue has helped me to be able to deal with different issues myself." One father discussed a specific example about learning from another father about suggesting prayer as a way to interact with their child. He further said, "when I feel down, I know I can de-stress by spending time with my kids."

Last, fathers were asked what they thought was the best thing about *Circle of Parents* and what they would change about the program. Regarding the best thing about the program fathers reported the following: getting advice, receiving knowledge, fellowship with other men ("brothers" coming together), coping with parenting, group involvement, opportunity to "open up and vent," ability to give and to receive, building a community, and the opportunity to get out of the house. When asked how to improve the program, the fathers offered the following recommendations: increase father involvement and number of people, better transportation, get out in the community as a group, get involved in the classrooms as a group, longer meetings, more frequent meetings, more meeting times as options, more involvement of children in the meetings, make it a requirement, more staff to help out with the program, and meet outside of the agency.

Findings from Administrative Records. In addition to the survey data collected by the research team, the administrative data from the Head Start education department was requested. This data was used to examine whether fathers who participated in *Circle of Parents* were more likely to engage in additional activities associated with Head Start. The agency documents the number of in-kind volunteer hours provided by parents and whether a parent participates through in-school classroom activities, extracurricular activities, or parent committee meetings.

Analyses of these records indicate that, overall, participants in our study had very low participation in other Head Start activities. Specifically, 7 out of 102 (6.9%) participated in in-school classroom activities, four (3.9%) in extracurricular activities, and nine (8.8%) in parent committee meetings. These were mainly the same fathers participating in the different activities. The total number of hours for these seven fathers (non-zero hours) ranged from 1 to 28 hours of volunteer participation (M = 8.0, SD = 10.2). There was an association between number of hours of volunteer participation and number of *Circle of Parents* group meetings attended (r_s = .30, p < .001). We also found a positive association between ever attending a *Circle of Parents* group meeting and ever attending a parent committee meeting (X^2 (1, N = 102) = 8.77, p < .01). Specifically, of those who ever attended a *Circle of Parents* meeting, 20.6 percent attended a parent committee meeting, compared with 2.9 percent of those who did not attend a *Circle of Parents* meeting. Similarly, we found an association between *Circle of Parents* attendance and in-class volunteering (X^2 (1, N = 120) = 4.91, p < .05); 14.7 percent of fathers who ever attended *Circle of Parents* also volunteered, compared with 2.9 percent of fathers who did not attend *Circle of Parents*. These findings suggest that fathers who attended *Circle of Parents* tended to be fathers who were also involved in other parent involvement activities at Head Start. However, in general, most fathers were not involved in any of these activities.

Child development and socio-emotional assessment records were available for 84 of the 102 children through WAGES administrative records. Each child had between 1 and 13 screening results available in their file, for a combined total of 556 records. Developmental and behavioral screening results were compiled based on screenings conducted by WAGES staff as well as records collected from pediatric offices. All WAGES internal

screenings were based on the ASQ (developmental) and ASQ-SE (behavioral). Additionally, external records from pediatric office screenings also included results from the PEDS, Brigance, M-CHAT, and PLS-5. Based on consultation with the WAGES Health and Disabilities Services Manager, all records were coded as *Passed*, *Failed*, or *Monitor* across these measures. Dates of screenings were then merged with study involvement dates to identify screenings that occurred before and after completion of the baseline questionnaire.

Findings indicate that for the first available screening result for the 84 children with assessment records, 12 (14%) had a failed developmental screen, 2 (2%) had a monitor status, and 70 (83%) had passed. Due to the low number of children in the monitor group, this group was combined with failed group for subsequent analyses. Based on this approach, 18 (21%) children in the sample had a failed/monitor status for a screening at any point. When considering entry into the study, 13 (16%) children were categorized as failed/monitor status for any screen prior to the father's baseline study assessment. Further, 10 (12%) children were failed/monitor status for a screening outcome after the father's baseline assessment.

The purpose of collecting these data was to determine whether participation in the *Circle of Parents* intervention was associated with improvement in child developmental status before and after father participation in the intervention. McNemar's chi-square test was used to determine whether an association existed between study condition and developmental assessment results (see Table 9). No significant difference was found across the four study groups: no difference existed across the two groups at randomization, and no difference existed across the two "complier" groups in child developmental status. The term complier refers to whether a participant remained in the treatment group to which they were randomized. These findings indicate that there was no impact of the intervention on child's screening assessment outcomes based on screenings conducted by Head Start staff or other sources.

Table 9. Proportion of Children with a "Failed/Monitor" Result for a Developmental Screening Assessment and Results of McNemar's Chi-Square Test Comparing Intervention Groups

	Encouragement Treatment		Non-Encouragement Control		
	Group 1 (*n*=19)	Group 2 (*n*=28)	Group 3 (*n*=28)	Group 4 (*n*=9)	*p*
Any					
failed/monitor	4 (21.0%)	8 (28.6%)	6 (21.4%)	0 (0%)	.347
Prior failed/monitor	3 (15.8%)	6 (21.4%)	4 (14.3%)	0 (0%)	.487
Post failed/monitor	2 (10.5%)	5 (17.9%)	3 (10.7%)	0 (0%)	.525

Note: "Any," "Prior," and "Post" refers to when the developmental screening took place. "Prior" refers to a screening that occurred before entering the study, "Post" refers to after entering the study, and "Any" refers to any time point before or after the study.

Group 1 = Treatment, participated in Circle of Parents ("complier"); Group 2= Treatment, did not participate in Circle of Parents; Group 3 = Control, did not participate in Circle of Parents ("complier"); Group 4 = Control, participated in Circle of Parents.

C.2 Aim 2 Results: Effectiveness of Circle of Parents

Many fathers did not "comply" with their condition assignment, either because they were assigned to treatment and did not attend meetings, or they were assigned to the waitlist comparison group and then attended meetings. Under these conditions, the assumptions of the randomized design to assess causal outcomes were violated. However, developments in statistical techniques allow researchers to estimate treatment effects in the context of non-compliance and selection bias.[68] As discussed in the Methods section, propensity score analysis was used to balance the groups based on measured covariates. First, though, a traditional intent-to-treat (ITT) analysis was conducted, with the obvious limitations and threats to validity acknowledged. Refer to Figure 1 for a description of the four groups identified in the subsequent analyses.

Table 10 presents findings from a standard ITT ANCOVA analysis comparing participants who were randomized to the treatment (encouragement to attend *Circle of Parents*) compared with participants randomized to the comparison condition (standard Head Start services and waitlisted to encouragement). Again, substantial numbers of fathers did not comply with these conditions. However, assuming that randomization produced equivalent groups at baseline, this analysis provides an unbiased estimate of the effect of encouragement to attend *Circle of Parents*. Whether any differences are the result of the intervention is not known.

Of the 10 outcome measures assessed at posttest, there were two significant differences. Fathers randomized to the encouragement group had an increase in the nurturing/attachment subscale of the PFS as well as a decrease in the child-parent conflict subscale of the Child-Parent Relationship scale. No difference was found in the primary outcome of interest (i.e., the social support subscale of the PFS) or other secondary outcomes such as parenting stress, parenting efficacy, or fatherhood commitment.

Two analytic approaches were used to estimate the treatment effect (the outcomes model). First, the covariate control approach simply includes the propensity as a covariate in the model predicting the outcome (PS-adjusted). Second, the propensity score weighting uses the propensity score to weight individuals based on the known selection assignment differences (PS-weighting). An important caveat and limitation of this approach is that the propensity score captures only known, or observed, covariates. In other words, any factor that influenced the choice of a participant to attend meetings (or not) must be adequately captured in order to truly minimize and eliminate selection bias.

Table 10. Intent to Treat Analysis (Group 1+2 vs. Group 3+4)

Measure	β (*SE*)	*t*	*p*
Protective Factors Survey			
Family Functioning Resiliency	-0.017 (0.22)	-0.08	.940
Social Support	-0.373 (0.31)	-1.20	.235
Nurturing/Attachment	0.233 (0.10)	2.26	.027
Concrete Support	0.445 (0.44)	1.02	.314
Child Development/Parenting	0.012 (0.20)	0.06	.951
Child–Parent Relationship			
Child–Parent Closeness	0.79 (0.84)	0.94	.351
Child–Parent Conflict	-3.38 (1.22)	-2.76	.008
Parental Stress	-3.24 (2.04)	-1.59	.118
Parenting Efficacy	1.61 (1.72)	0.93	.355
Fatherhood Commitment	0.46 (0.64)	0.72	.475
Child Development Concerns	0.11 (0.11)	1.03	.307

Note: Covariates include baseline child and father demographics and pre-test scores.
Group 1 = Treatment, participated in Circle of Parents; Group 2= Treatment, did not participate in Circle of Parents; Group 3 = Control, did not participate in Circle of Parents; Group 4 = Control, participated in Circle of Parents.

Table 11 presents the treatment estimates of the two propensity score approaches, PS-weighting and PS-adjusted, comparing groups that attended *Circle of Parents* meetings with those that did not, regardless of randomization to encouragement. Given that encouragement was not associated with selection into treatment conditions, this was ignored in the treatment effect model but was included in the propensity score selection model. All models predict follow-up scores, controlling for baseline scores as a covariate. In all models, the

comparison group was participants who did not attend *Circle of Parents* whereas the treatment group consisted of fathers who attended at least one meeting (refer to Figure 1). Effects significant at the $p < .05$ level are bolded in the tables.

Presented in Table 11, three significant effects were found in the PS-weighting model, and one significant effect was found using the PS-adjusted ANCOVA model. Fathers who attended *Circle of Parents* had lower social support at follow-up, when controlling for pre-test social support, compared to fathers who did not attend *Circle of Parents* (β = -0.68, *SE*= 0.33, $p < .05$). However, findings also indicated higher parenting efficacy at follow-up (β = 5.30, *SE*= 2.37, $p < .05$). These adjusted means for baseline and follow-up for these scales are presented in Figure 2 and Figure 3. As indicated in Figure 3, there was not a reduction in social support from baseline to follow-up, but the slope of the line (or increase in social support) was not as high for the treatment group compared to the comparison group. This might indicate that fathers in both groups improved social support simply through their broader involvement with Head Start. With their children enrolled in services, they may have had more access to other sources of support regardless of whether they attended formal groups. Parenting efficacy (Figure 2) had the opposite direction of change. The treatment group had an increase in parenting efficacy and the comparison group had a decrease. In both models, there was a significant increase in the PEDS scale ($p < .001$), which measures parental concerns about child development.

Table 11. ANCOVA Comparing all Treated and all Comparison Regardless of Randomization to Encouragement (Group 1+4 vs. Group 2+3)

	PS-weighting ANCOVA			PS-adjusted ANCOVA		
	(SE)	*t*	*p*	*(SE)*	*t*	*p*
Protective Factors Survey						
Family Functioning Resiliency	-0.093 (0.21)	0.44	.660	-0.087 (0.26)	0.34	.737
Social Support	-0.677 (0.33)	-2.08	.042	-0.458 (0.35)	-1.29	.201
Nurturing Attachment	-0.113 (0.13)	-0.87	.386	-0.055 (0.12)	-0.45	.652
Concrete Support	-0.572 (0.41)	-1.39	.169	-0.544 (0.52)	-1.05	.299
Child Development/Parenting	-0.224 (0.17)	-1.35	.183	-0.238 (0.23)	-1.01	.315
Child–Parent Relationship						
Child–Parent Closeness	0.41 (0.72)	0.57	.571	1.08 (0.86)	1.25	.216
Child–Parent Conflict	1.69 (1.20)	1.40	.167	1.17 (1.47)	0.80	.427
Parental Stress	-0.705 (1.83)	-0.38	.702	0.927 (2.33)	0.40	.693
Parenting Efficacy	5.30 (2.37)	2.23	.029	2.55 (1.86)	1.37	.176
Fatherhood Commitment	-0.988 (0.57)	-1.73	.088	-1.16 (0.68)	-1.72	.091
Child Development Concerns	0.349 (0.10)	3.47	.001	0.361 (0.12)	3.08	.003

Note: Covariates include baseline child and father demographics and pre-test scores.

Group 1 = Treatment, participated in Circle of Parents; Group 2= Treatment, did not participate in Circle of Parents; Group 3 = Control, did not participate in Circle of Parents; Group 4 = Control, participated in Circle of Parents.

Table 12. ANCOVA of Compliers in Both Conditions (Group 1 vs. Group 3)

	PS-weighting ANCOVA			PS-adjusted ANCOVA		
	(SE)	*t*	*p*	*(SE)*	*t*	*p*
Protective Factors Survey						
Family Functioning Resiliency	-0.499 (0.28)	-1.76	.087	-0.111 (0.39)	-0.29	.774
Social Support	-0.869 (0.35)	-2.45	.019	-0.678 (0.54)	-1.25	.219
Nurturing Attachment	0.242 (0.10)	2.43	.020	0.172 (0.18)	0.96	.346
Concrete Support	-0.313 (0.52)	-0.60	.550	-0.733 (0.80)	-0.91	.368
Child Development/Parenting	-0.369 (0.21)	-1.72	.095	-0.246 (0.37)	-0.66	.514
Child–Parent Relationship						
Child–Parent Closeness	1.44 (0.77)	1.87	.069	1.96 (1.24)	1.58	.124
Child–Parent Conflict	-3.69 (1.52)	-2.42	.021	-1.38 (2.13)	-0.65	.523
Parental Stress	-0.14 (2.19)	-0.07	.948	-2.01 (3.68)	-0.55	.588
Parenting Efficacy	3.73 (2.45)	1.52	.137	6.23 (2.80)	2.23	.033
Fatherhood Commitment	-0.07 (0.56)	-0.12	.910	0.10 (0.79)	0.12	.904
Child Development Concern	0.64 (0.11)	5.89	.001	0.55 (0.13)	4.35	.001

Note: Covariates include baseline child and father demographics and pre-test scores.

Group 1 = Treatment, participated in Circle of Parents; Group 3 = Control, did not participate in Circle of Parents.

Figure 2. Parenting Efficacy at Baseline and Follow-up Comparing Fathers Randomized to Treatment and Comparison Conditions

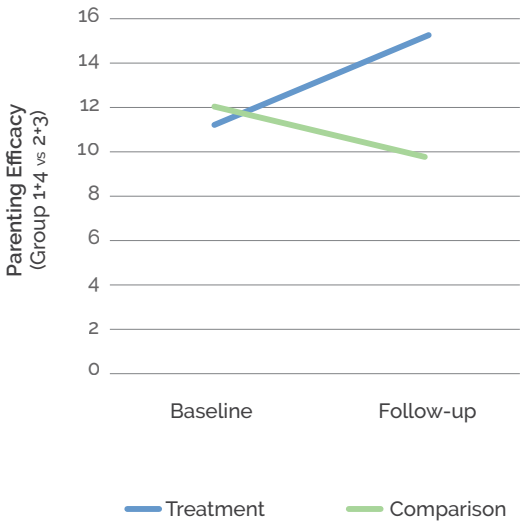
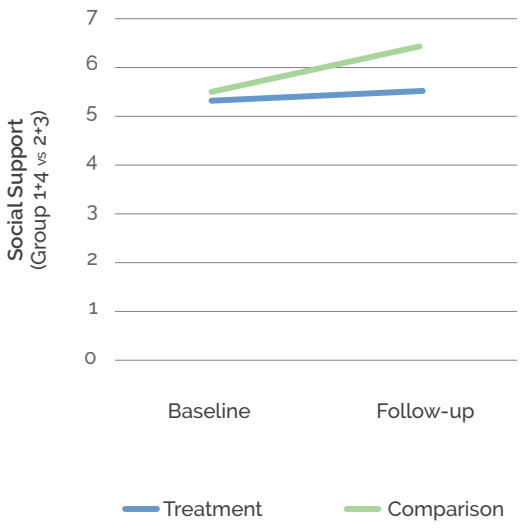


Figure 3. Social Support at Baseline and Follow-up Comparing Fathers Randomized to Treatment and Comparison Conditions



Next, with findings presented in Table 12, an analysis comparing the so-called compliers in both conditions was conducted. This analysis examined only the participants randomized to the treatment condition who ever attended a *Circle of Parents* meeting (Group 1, n = 22) in comparison with the fathers who were randomized to the comparison condition who did not attend any *Circle of Parents* meetings (Group 3, n = 35). A similar propensity score analytic approach was used to balance these groups based on selection bias. Four significant findings were identified in the PS-weighting model and one in the PS-adjusted ANCOVA model. For the treatment group, there was a reduction in follow-up social support (β = -0.869, SE= 0.35, $p < .05$) and in child-parent conflict (β = -3.69, SE= 1.52, $p < .05$), but higher nurturing/attachment subscale (β = 0.242, SE = 0.10, $p < .05$) and higher concern about child developmental status (β = 0.64, SE = 0.11, $p < .01$). In the PS-adjusted model, parenting efficacy was higher for the treatment group (β = 6.23, SE = 2.80, $p < .05$) and parental concerns about child development also increased (β = 0.55, SE = 0.13, $p < .01$).

Again, Figure 4 and Figure 5 are based on descriptive statistics and are provided to help to interpret these findings. There is an increase in child–parent conflict shown in Figure 4 among fathers in the comparison group, while there is a decrease for fathers who were treated. Further, in Figure 5, the treatment group shows an increase in parenting efficacy, while the comparison group decreases.

Figure 4. Conflict at Baseline and Follow-up Comparing Fathers in the Treatment Condition who Attended *Circle of Parents* to Fathers in the Comparison Condition Who Did Not Attend *Circle of Parents*

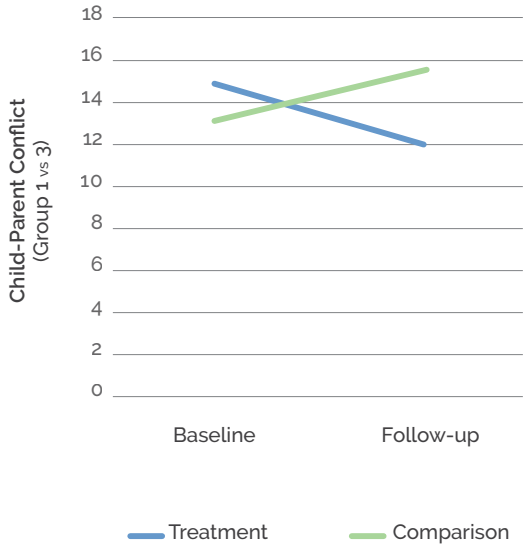
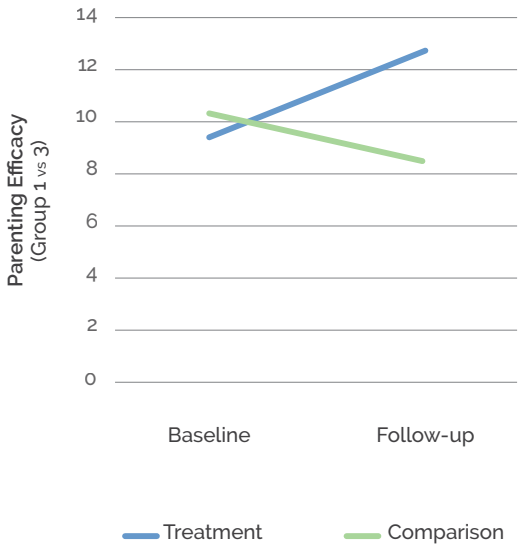


Figure 5. Parenting Efficacy at Baseline and Follow-up Comparing Fathers in the Treatment Condition who Attended *Circle of Parents* to Fathers in the Comparison Condition Who Did Not Attend *Circle of Parents*



D. Discussion

The purpose of this study was to determine whether fathers with children in Head Start would engage in a peer support program. If so, this study also sought to determine whether participation in the program improved social support, father–child relationships, and other important outcomes. Prior research has indicated that engaging fathers in parenting support services and parent involvement programs is a challenge. To address some of the barriers to engagement, we implemented *Circle of Parents*, an evidence-informed program that emphasizes mutual aid and peer support. Overall, findings of this study are consistent with prior research. Engaging fathers was extremely challenging and participation was much lower than anticipated or desired. However, there is some evidence to suggest that fathers who participated in *Circle of Parents* had increases in parenting self-efficacy, more concerns about child development, and reduced child–parent conflict.

Based on quantitative and qualitative findings, it appears that the most salient predictor of engagement were barriers related to scheduling. Specifically, fathers who were working full time found it challenging to find either the time or the energy to participate in the *Circle of Parents* group. One of the planning recommendations from the Head Start programming guide for fathers is a focus on "developing schedules that meet the needs of working parents." After some initial indication that scheduling was a barrier, we attempted to find other times of day and days of the week to hold meetings. This approach did not improve the overall level of engagement because with only one or two meetings a week, changing the time would exclude or include a segment of fathers depending on their work schedule. There does not appear to be a single one-hour time period during the week that all fathers would be able to, or be expected to, attend a weekly meeting.

One solution to this issue would be to have numerous weekly meetings covering many possible times of day and days of the week. However, the *Circle of Parents* model requires the availability of at least one trained staff member to facilitate the group meeting and, in some cases, to provide child care. This could easily become a full-time position just planning and staffing meetings to meet the schedules of all fathers, and is likely not an cost-efficient approach. Other strategies to engage fathers, such as home-based or community-based services augmented with weekly group meetings on alternating schedules might be a more feasible approach. A weekly group meeting might be the anchor for a group that also includes community events (e.g., cookouts, sporting events) as well as outreach to individual fathers in their homes. One father suggested an idea of having "front porch" meet-ups rotating around specific neighborhoods. However, the expectation that a weekly support group will meet the needs of all fathers in Head Start is not realistic or feasible. The weekly group meetings at Head Start centers could be a regular meeting to convene for planning and integrating new members or to have special events such as guest speakers, but would only be one part of the group's efforts. Further, findings indicate that engagement was greater among fathers of younger children. This makes sense as new fathers caring for infants may be less experienced with caregiving and be more open to receiving support during this challenging parenting period. This may indicate that targeted recruitment of population "segments" would yield higher engagement and also allow content to be tailored to specific subgroups of fathers. Fathers of infant would likely benefit from different types of content than fathers of adolescents or teenagers, for example. More participatory research is clearly needed that involves fathers in the design and evaluation of innovative models.

D.1 Effects of *Circle of Parents*

The results of this study do not indicate strong support for the effectiveness of this model in improving outcomes for fathers or their children. Although fathers indicated that they found the program acceptable, our results indicate that participation in the group did not yield a significant positive return for social support above usual Head Start services. A program can be generally seen as favorable by participants but not provide any

measurable benefit. However, given that findings indicate improvements in self-efficacy and reduced conflict, it is possible that the program provided benefits to fathers through other aspects of the program other than social support. For example, the content regarding parental goal-setting and building positive parent–child relationships would likely improve self-efficacy and reduce conflict regardless of improved social support. Our findings also indicate that participation in *Circle of Parents* was associated with an increase in father-reported concerns about child developmental status measured using a validated child development screener (PEDS). It is unlikely that father participation caused a drop in their child's actual developmental status compared to fathers who did not participate. However, it is quite possible that fathers who participated in group meetings gained a greater understanding for and awareness of child developmental concerns, and were therefore more likely to indicate an existing concern with child development at follow-up that was undetected at baseline. Greater concern about child developmental needs could eventually yield benefits for the child if the father increases engagement with child developmental specialists and identifies positive strategies to support their development. These findings warrant further research.

The study sample included a core group of fathers who passionately participated in group meetings and were the strongest messengers for outreach efforts. However, their participation was largely about giving back to others. Although these fathers certainly gained some positive benefit from helping others, this group of fathers would likely continue to have strong social support and father–child relationships in the absence of *Circle of Parents*. Translating their efforts into improvement for other higher risk fathers who would have struggled with these outcomes in the absence of *Circle of Parents* was not realized in this study.

The design of this study precluded our ability to make a strong causal claim about the effectiveness of the program. Specifically, noncompliance with treatment conditions (a common issue in community-based clinical trials), rendered the balance in the initial experimental groups potentially invalid. However, quasi-experimental methods were used in this study to examine both the causal effects of the encouragement strategies as well as the intervention. In both cases, the impacts of these interventions were non-existent or not strong enough to warrant any support for their efficacy. First, no difference was found in engagement between those randomized to receive weekly encouragement reminders to participate and those who were not targeted for engagement encouragement. Second, there were few positive impacts for fathers who participated in the intervention compared with those who received usual services.

Despite the overall lack of support for the effectiveness of the intervention, a few findings deserve some consideration. The primary outcome of interest for this study was the social support subscale of the Protective Factors Survey. There was no difference in reported social support at baseline. Findings indicate that while all fathers had an increase in social support from baseline to follow-up, fathers in the comparison group had a sharper increase in social support. This finding might suggest that fathers who did not attend the *Circle of Parents* group were finding social support outside of Head Start, or these group meetings specifically. This finding also demonstrates the importance of a comparison group in evaluation research. Although fathers who participated in *Circle of Parents* had a slight increase in social support (as expected by the model), this gain was not greater than what was experienced by those fathers receiving usual services. This suggests that the additional cost of providing the peer support group is not cost-effective for influencing this outcome.

Both the intent-to-treat and propensity score analyses indicated some positive improvement in parenting self-efficacy for those in the treatment group. All of the items on this scale begin with, "I am good at . . ." followed by a specific parenting skill or attribute (e.g., "getting my child to have fun with me"). It is possible that by interacting with other fathers and gaining some reference to the struggles and abilities of other fathers, those who participated in *Circle of Parents* gained some increase in self-efficacy with their parenting

beyond that experienced by fathers who did not participate in the intervention. Parenting self-efficacy is an important aspect of self-esteem and a valuable target for interventions seeking to improve outcomes for fathers. However, building confidence in a person's perceived parenting skills and development of evidence-based parenting strategies are different outcomes. Therefore, it is not known whether improved self-efficacy translated into improved parenting skills or parent–child relationships.

Implications for Research. There were many valuable "lessons learned" from this study that might be relevant for other researchers and practitioners planning to conduct studies of peer-support programs. Three main implications are described here. First, the main interest of this study was to understand the effectiveness of an intervention delivered to fathers. Although we anticipated there would be challenges with engaging fathers, our ability to understand effectiveness is limited by the lack of compliance with randomized study conditions. In this study, participation in the intervention group was very low, and therefore, instituting a waitlist comparison group became challenging. Establishing a consistent, functioning group can take time, and may have contributed to some of the challenges related to engaging fathers. On the other hand, almost two years later, the program continues to have challenges engaging fathers, so the disruption to the groups at the study outset might have had minimal effects on findings. Nevertheless, to execute the waitlist-controlled design in a real-world setting, the waitlist should be justified by constrained resource availability; in this case, too many clients to be served by the group facilitator.

Second, the results of this study also indicate the potential for a limited return on investments in traditional engagement strategies such as brochures, reminders, and small incentives (e.g., food, raffles, movie nights). Awareness about a program and token perks are likely not sufficient to overcome the perceived costs and barriers most fathers face to participate in such programs. The perceived benefits of the program must be increased for future efforts to be successful. Some fathers may expect real positive benefits of participation, but also high opportunity cost; participation may mean shifting schedules and negotiating child care in order to create just an hour of free time. Other fathers might perceive the benefits to be low, but they may also have the free time to participate. In these cases, strategies to better communicate the benefits or participation are needed, or we need to communicate the benefits in terms that are more appealing to fathers. For example, fathers may find more benefit in father–child activities or group outings in the community rather than discussion-based fathers-only meetings.

Third, one of the strengths of this study was the intentional researcher-practice partnership used in this study. Although there were many challenges faced in recruitment, engagement, and participation of fathers, all of these challenges would have been insurmountable without a strong partnership team. The most successful aspect of this project was the use of fathers from WAGES to serve as recruitment coordinators for the study. Their ability to speak directly to other fathers in the program and encourage them to participate in the study was much more successful than passive recruitment or the efforts of the university research team to engage fathers. The facilitator and parent leader were the experts on this population, and their insights were extremely valuable to the research efforts.

Implications for Practice. This study does not provide support for the effectiveness of *Circle of Parents* delivered to fathers of children in Head Start. Although design issues limit the ability to make strong causal claims, the findings provide little evidence that this approach holds promise either to engage fathers or to improve the identified outcomes assessed in this study. *Circle of Parents* is a widely used, evidence-informed model. This feature might be appealing for program developers in Head Start (or similar settings). However, these findings indicate that implementation of this intervention may be extremely challenging due

to barriers to participation. Program leaders should weigh the incremental cost of training and participation in implementation support against the incremental benefits.

Many strategies were attempted to engage fathers in this intervention. In addition to traditional approaches such as constant reminders and incentives, other creative strategies were attempted. One strength of the *Circle of Parents* model is that it allows for great flexibility in allowing parents to determine the content and structure of group meetings. In this case, the core group of fathers and the group facilitators took a great deal of ownership over the program and were invested in finding ways to recruit and engage their peers. Participants tried developing weightlifting groups and group workouts to try to attract fathers who might be interested in getting in shape. The group tried movie nights and bowling nights to try to attract fathers with activities they could do with other fathers and their children. However, these strategies, and others, proved generally unsuccessful. Future efforts will need to be more individual-focused or tailored to specific subgroups of fathers. For example, fathers with infants (target child younger than one year old), were more likely to engage in groups. Perhaps a "new dads" group would show greater engagement rather than a general "fathers" group. Indeed, market segmentation is a cornerstone of successful commercial marketing and should be attempted in social services as well.

The enthusiasm and excitement of the small group of engaged fathers is certainly an untapped resource that likely exists in many Head Start contexts. Additionally, reflecting on the findings of this study, the facilitator and parent leader both expressed strong perceived benefits of the program. When discussing whether to continue the program, they suggested that the benefits/value of the program outweighed the challenges with engagement. Generally, there was agreement that *Circle of Parents* alone would not be a sufficient strategy for father involvement efforts in a Head Start setting. After seeing the positive, yet anecdotal, benefits to individuals who did choose to use the support, the parent leader and facilitator held a strong personal belief in the power of the model to change lives, but agreed that clearly more is needed to reach all fathers. This study and this intervention were not able to successfully empower and partner with a broader population of fathers in a way that allowed the facilitator and parent leader to be successful in their outreach. Future research should explore how best to use this strong asset. Perhaps an approach similar to the paraprofessional home-visiting models specifically designed for fathers might hold promise. The research-practice partnership developed for this study is an ideal collaborative approach to developing, testing, and refining such interventions. Future efforts will build on the lessons learned from this study and our team remains optimistic about developing strategies to engage fathers to support them in developing positive relationships with their children.

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