# FINAL REPORT


Produced by
**SPEC Associates**
Detroit, Michigan

# Ready Children Ready Communities:
# Final SIF Evaluation Report

## Introduction

*Ready Children Ready Communities* aims to make Michigan's children ages 0-5 living in Southern Macomb County and Wayne County ready for a successful start in Kindergarten by:

- Screening and assessing children for developmental delays and mental health needs
- Providing literacy-related home visits for at-risk families using the evidence-based Parents As Teachers (PAT) curriculum
- Providing a social emotional consultant, as well as referrals to other mental health services, for children and families who need more intensive support
- Offering Play and Learn Groups for parents[1] and children ages 0-5 in community sites, including schools, libraries and early learning settings
- Staging parent-child community events focused on early childhood learning for families, schools and communities and on providing information about community resources

### Problem Definition

Over the years, Southern Macomb County and Wayne County in Michigan have experienced sharp declines in income, sharp decreases in academic achievement at the 3rd grade level, drastic demographic changes and large losses of a sense of local community and school/neighborhood pride. At the time *Ready Children Ready Communities* was conceived, State of Michigan test scores for children living in the targeted areas fell below the state average. In 2010, 3rd grade scores in the Van Dyke District were 5% lower in math and 9% lower in reading, East Detroit District was 4% lower in math and 7% lower in reading, Fitzgerald District scored 3% lower in math and 13% lower in reading and Center Line was 25% lower in math and reading. The city of Detroit's elementary schools ranked 528 out of 539 districts around the country. These school districts continue to be high risk educationally. The current Michigan Department of Education school data show that the situation persists. In all four school districts, fewer than 15% of 3rd through 8th grade students are proficient in Math and English Language Arts.[2]

The population of the communities targeted by *Ready Children Ready Communities* is diverse, but within each community it is segregated. The Fitzgerald District has a very large English as a Second Language (ESL) population that is primarily Bengali. The Detroit District is 95% African American. The Van Dyke District has had a significant population shift as cited in the 2010 Census with the current school population transitioning to 60% African American and a small ESL Hmong population. The East Detroit and Center Line Districts have also experienced significant population shifts with increases in rentals and increased racial and ethnic diversity, most notably increases in African American and Arabic populations.

[1] The term "parent" in this report is used to refer to any adult family member or legal guardian who is acting in the role of the parent vis a vis participation in the intervention.

[2] See https://www.mischooldata.org/DistrictSchoolProfiles/ReportCard/EducationDashboard3.aspx retrieved 12-19-2017.

For the Hamtramck area, 45% of the school population and 20% of the general population is Arabic speaking. It is the largest Bengali population in the state.

The poor school performance of children in the *Ready Children Ready Communities* target area creates an extreme need for interventions aimed at improving academic achievement. The diversity of the populations in this targeted area suggests that there are many cultural and language factors that can create challenges in effectively implementing community-based interventions.

## Description of the Interventions

*Ready Children Ready Communities* interventions aim at stemming the problem of youth educational achievement by starting interventions during infancy. Three interventions were implemented and evaluated:

- Parents as Teachers (PAT) home visit
- Play and Learn Groups
- Mental health services (i.e., social emotional consultation/intervention services).

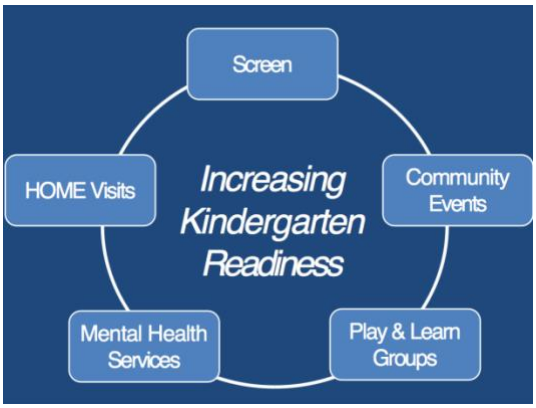



*Figure 1. Program Components of Ready Children Ready Communities*

Families were identified and/or screened for these interventions through early childhood mental health specialists, summer kindergarten camps, and community-wide educational events. The logic model summarizing the *Ready Children Ready Communities* inputs, activities and expected outcomes is contained on page XX.

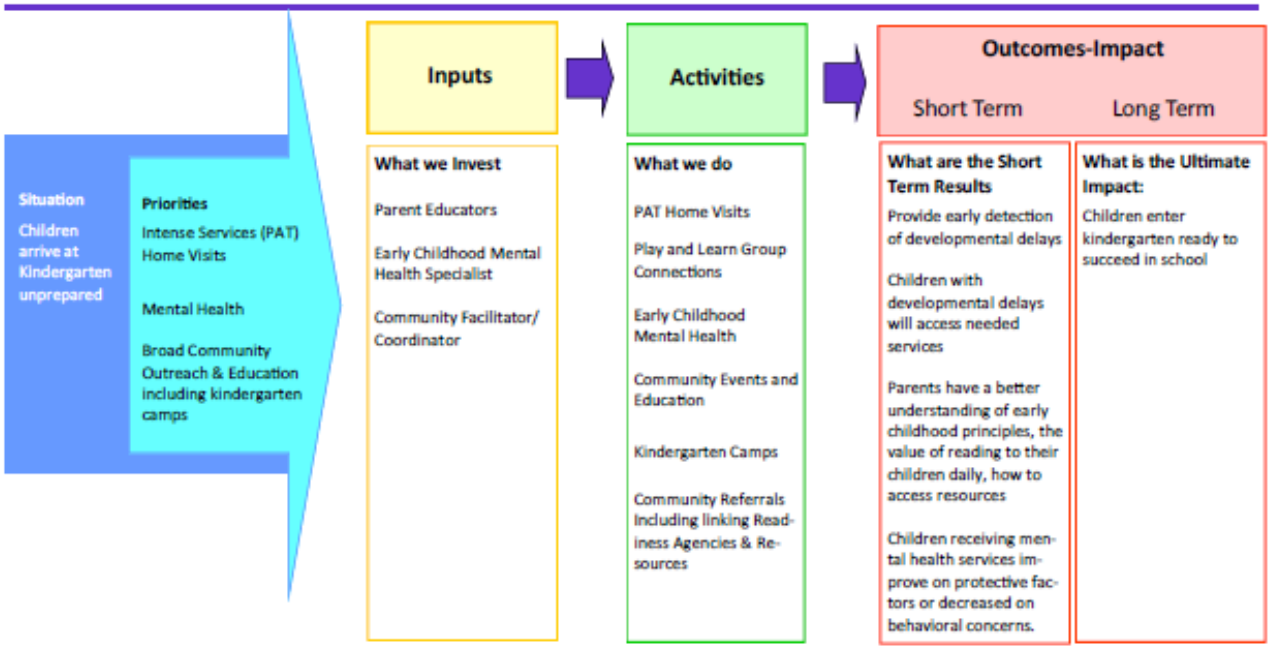
Three agencies were responsible for implementing components of the intervention:

- Macomb Intermediate School District (MISD)
- Leaps & Bounds Family Services
- Macomb Family Services.

All three agencies engaged in community outreach and implemented Play and Learn Groups. Macomb Family Services implemented the social emotional consultation/intervention services. Leaps & Bounds Family Services implemented almost all of the PAT home visits. Macomb Intermediate School District implemented all of the kindergarten camps. The staff implementing these interventions was ethnically and racially diverse and held credentials appropriate for their roles on the project.

Below are brief descriptions of all four components of the program, the three interventions studied by this evaluation as well as the community/school collaborations and events, which was not studied in this evaluation.

Figure 2:
*Ready Schools Ready Communities*
Logic Model



## PAT Home Visits

Research has demonstrated that Kindergarten readiness is sharply impacted by early literacy home visiting programs.[3] The PAT home visiting model used in *Ready Children Ready Communities* is a thoroughly evaluated home visiting early childhood intervention program and is widely used to promote improved family and child outcomes. It is one of only 12 home-based intervention models which the Department of Health and Human Services has recognized as being empirically based,[4] and it is only one of nine federally approved Home Visiting models through the Affordable Care Act (ACA) Maternal, Infant, and Early Childhood Home Visiting Program. There have been multiple randomized control trial evaluations of the PAT program. Findings from these RCT evaluations have demonstrated that PAT has a significant and positive impact on social skills, problem solving and cognitive skills amongst children in low income families;[5] reduced risk of child maltreatment via increased parenting knowledge and skills; [6] and improved home environments for supporting early childhood learning. [7]

High-risk families in the target areas of south Warren and a few zip codes in Wayne County were eligible to receive a minimum of eight monthly PAT home visits through *Ready Children Ready Communities*. While the home visits primarily serve those areas, they were also made available to families in any zip codes supported by the SIF grant.

PAT home visits occur with the parent and child together. Visits include three primary components. Parent-child interaction is the first component and includes activities and developmental information that parents can continue with children between visits. This part of the visit also includes book sharing and literacy development. Development-centered parenting is the second component. It supports parents in connecting their parenting behavior with their child's development. Family well-being is the final component focusing on supporting parents in providing physically healthy and emotionally supportive learning environments for their children. Much emphasis of this component is on social emotional development and supporting families in times of stress.

*Ready Children Ready Communities* follows PAT essential requirements for program design. Parent educators complete a family-centered assessment within 90 days of enrollment and then annually. Parent educators use the PAT curriculum on monthly visits with enrolled families. Children are screened

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[3] For example, one research study demonstrated that "at age six, children who participated in the NFP home visiting program in Memphis had higher cognitive and vocabulary scores than those in the control group." (D. Olds, et al., "Effects of Nurse Home-Visiting on Maternal Life Course and Child Development: Age 9 Follow-up Results of a Randomized Trial." *Pediatrics* 120 (2007): e832-e845). Also see, Zigler, E., Pfannenstiel, J.C., & Seitz, V. (2008). The Parents as Teachers Program and School Success: A Replication and Extension. Journal of Primary Prevention, 29, 103-120.

[4] Avellar, S.A. & Supplee, L.H. (2013) Effectiveness of Home Visiting in Improving Child Health and Reducing Child Maltreatment. PEDIATRICS. Vol. 132 No. Supplement 2, November 01, 2013.

[5] Drotar, D., Robinson, J., Jeavons, L., & Lester Kirchner, H. (2009). A randomized, controlled evaluation of early intervention: The Born to Learn curriculum. Child: Care, Health & Development, 35(5), 643-649.

[6] Armstrong KH, Ogg JA, Sundman-Wheat AN, Walsh AS. (2014). Evidence-based interventions for children with challenging behavior. New York: Springer.

[7] McCabe, L.A. & Cochran, M. (2008). Can Home Visiting Increase the Quality of Home-Based Child Care? Findings from the Caring for Quality Project (Research Brief No. 3). Cornell, NY: Cornell University Early Childhood Program.

using the *Ages and Stages Questionnaire* (ASQ) and, if needed the *Ages and Stages Questionnaire: Social Emotional* (ASQ:SE) is also administered within 90 days of enrollment and annually thereafter. Children with developmental delays are referred for further support. All families are invited to join Play and Learn Groups as well as to attend community events.

All new parent educators who deliver PAT home visit services to families attend the Foundational and Model Implementation Trainings before delivering the program. New supervisors attend the Model Implementation Training. For this evaluation, parent educators received an observation by an early childhood specialist during a home visit and were given feedback and support. Each month, parent educators working more than .5 FTE participated in a minimum of two hours of individual reflective supervision and a minimum of two hours of staff meetings. Parent educators working .5 FTE or less participated in a minimum of one hour of reflective supervision and two hours of staff meetings.

### ***Play and Learn Groups***

While the use of groups is one component of the evidence-based home visit PAT model, Play and Learn Groups as a stand-alone intervention outside of PAT have not been rigorously studied. However, the model of Play and Learn implemented through *Ready Children Ready Communities* is based on the research-supported assumption that a child's first teacher is his or her parents. Experts say that the choices families make regarding literacy are more important than the family's income or the caregiver's educational background in predicting future success.[8] Research shows that when young children and adults interact through talking, singing, and rhyming together they stimulate language development which creates the foundation for learning to read.[9] These are the types of activities parents and children engaged in during the Play and Learn Groups.

Play and Learn Groups are a regularly scheduled time for parents and children to be together with others. Play and Learn Groups at different locations can focus on different age ranges of children from birth to Kindergarten. The groups include structured activities for small and large motor development, cognitive development, and social emotional development. Activities can include number, letter and color recognition; music and movement; and early science activities. All activities are designed to have children and their parents work, play and learn together. Parents receive materials to continue the learning at home. Children's social emotional growth develops as they learn to play/work with others. Through regular participation, parents develop a learning community as do the children.

### ***Screening and Mental Health Services***

PAT home visit children are screened for developmental delay using the *ASQ*. Children may also be referred to mental health services through the Play and Learn Groups, community events, or school or program-based relationships. Children whose ASQ score indicates high risk for social-emotional problems and/or whose parents indicate concern about the child's behavior are administered the

[8] Ballen, J., & Moles, O. (1994, September). Strong Families, Strong Schools: Building Community Partnerships for Learning. Washington, DC: U.S. Department of Education. [ERIC No. ED 371909].
[9] Hart, B & Risley, T.R. (1995). *Meaningful differences in the everyday experiences of young American children.* Baltimore, MD: Brookes Publishing.

ASQ:SE (Social Emotional). Children are referred to mental health services, based on ASQ:SE results and/or other information.

Social emotional consultation/intervention services are individually tailored to the specific cognitive, social and/or emotional needs of the child. They are delivered by licensed mental health professionals. Treatment programs are designed to alleviate the distress and suffering of a young child's mental health problem and to support the return to healthy development and behavior. Methods of intervention may involve helping caregivers to better understand a young child's mental health needs. Dyadic therapy, for instance, involves therapy for both child and parent together and may help a parent understand how to help a child regulate his or her emotions (e.g., tantrums and rages) and learn to verbally express his or her feelings.

These mental health services are also provided to teachers in preschools and to groups of parents. The research-based Social Emotional School Readiness Curriculum through the Center on the Social Emotional Foundations for Early Learning[10] (CSEFEL) is used to facilitate educational support groups for parents of children birth to five.

Parents/caregivers/teachers of children referred for social emotional consultation/intervention services complete the Devereux Early Childhood Assessment (DECA) on a pre-post basis, which is used for assessment, goal planning, and evaluation.

### ***Community/School Collaboration and Events***

Ongoing work to coordinate communication between families, schools, and communities is critical to a child's success. Families need to know steps to prepare not only their children but the family as a whole to participate in and support strong education for their children. Through community wide public awareness events, parents learn about early childhood community resources. Through their awareness and subsequent use of community resources such as Play and Learn Groups, home visits, parenting classes using the *STEP* curriculum, and/or Kindergarten readiness activities, parents learn what school readiness means and ways to support their children such as reading to their children for a minimum of 15 minutes daily.

Community events include activities such as kindergarten roundups, kindergarten "prep" summer camps and family fun days for parents with young children. Families are recruited from the Department of Human Services, area churches, Head Start sites, and Kindergarten/elementary programs in the area. Parents with newborns are recruited through Wayne County Regional Education Service Area and MISD's Great Parents' outreach, and through vigorous outreach through the Parent Coalitions of Great Start Collaboratives in Macomb and Wayne counties.

## Stories from the Field

A good way to understand the *Ready Children Ready Communities* interventions is through vignettes provided from staff and families who are directly involved in them. These stories coming directly from staff and parents are examples of each of the three types of interventions and their perceived impact.

[10] See http://csefel.vanderbilt.edu/index.html retrieved 12-19-2017.

The intent of these stories is to give the reader a sense of what implementation of these interventions looks like "on the ground."

## Stories from the Field

### *Stories of PAT Home Visit Success*

A Yemini mother with one child contacted the Parent Educator wanting to receive home visits. The mother did not speak English and had been in the U.S. for three years. The mother expressed concerns because her child, who was two years old at the time, was not speaking. Agency staff completed an ASQ/ASQ SE on the first home visit. Results were such that an immediate referral was made to Early-On where the child was diagnosed as autistic. The child began receiving services through Early-On and the PAT Parent Educator continued home visits with the mother and child for one year. The child is now enrolled in a special preschool program and the mother continues to contact the Parent Educator for support and referrals. The mother also participates in parent workshops at the agency.

A Yemeni mother, who has a 4th grade Yemeni school education and few English skills, and her two children (ages 2 and 9 months) began receiving home visits. The focus was on children's development. Much time was spent focusing on using children's books for learning. The PAT Parent Educator showed the mother how to create stories based on book pictures. This mother and her two children also joined Play and Learn Groups. Through her experiences there, this mother participated in a community of other English language learners while also learning with her children through the group activities. The mother is now speaking a bit of English and her children are thriving. The sense of isolation that she and therefore her children were experiencing has been greatly diminished.

## Stories from the Field

### *A Parent's Perspective on Play and Learn Groups*

(taken from *Building Healthy Relationships in Early Childhood: Macomb Family Services' approach to nurturing development of social emotional health and school readiness in early childhood,* p. 56)

"Play and Learn may seem like a simple thing – some songs and stories and crafts. But it really is an opportunity for parents to open doorways into new worlds they might never have discovered without such opportunities. Play and Learn is great for helping our children learn to socialize, but it's also great for parental interaction as well. So many times, I've talked with other parents who are facing similar experiences. The conversation starts like this: 'I'm having a terrible time right now with potty training. How about you?' Or, 'My two toddlers fight at home. Do your kids fight?' Or, 'How do you get her to sleep at night? We're having bedtime problems.' Or, 'Do you try to regulate the television at home? How do you do it?' Or, 'He won't give up that pacifier. Did you have a problem with that?'

"As parents, we're all in the same boat. We all get lost sometimes. We all need someone to hold our hand, reassure us and give us some guidance…"

## Stories from the Field

### *Social Emotional Consultation and Its Impact*

#### *Getting Great Start Readiness Program Children Ready for Kindergarten*

During the 2016-2017 school year, the social emotional consultant began working in a Great Start Readiness Program classroom. The teachers expressed serious concerns about the students' self-regulation, initiative, and listening skills. The teachers noted that all of their children were expected to enroll in Kindergarten for the 2017-2018 school year and they did not think they would be successful based on their current functioning. The consultant completed two observations of the classroom, and observed that several of the children had very healthy skills. The observations were supported by the DECAs completed by the teachers, that showed several of the children were in the typical range. However, there were clearly certain students who were struggling in one or multiple areas. The consultant began emotional literacy building activities in the classroom, such as reading Glad Monster, Sad Monster and The Way I Feel and then having the students do related activities. The activities typically involved fine motor skills, provided sensory input, and built the children's initiative. The students very quickly grasped the concepts, and the consultant moved on to self-regulation activities. The children enjoyed using stories, songs, and even a parachute to practice self-regulation skills. Over the course of the three months that the consultant engaged with the students, the social worker observed that two of the children had significant speech delays or impairments. The social worker recommended that the teachers refer the students to the appropriate school districts for evaluation. The consultant observed that one student, although extremely bright academically, had behaviors consistent with Autism Spectrum Disorder. The teachers agreed with the consultant's observations, and completed several additional screening tools (M-CHAT, Social Communication Questionnaire, and SPM-P) all of which indicated a high likelihood of Autism. The consultant supported the teachers in meeting with the student's mother to discuss the concerns and make appropriate referrals. By the end of the school year, post-DECA scoring indicated that 11 of the 12 enrolled children had made improvements in at least one area. The children were now functioning almost exclusively in the "strengths" range across all domains. The teachers reported being very pleased with the progress and, after extensive conversations with the consultant, felt very positively about the children's chances of success in Kindergarten.

#### *Helping and Adoptive Mother and Adopted Child to Bond with Each Other*

When her four-year-old adopted son was expelled from a child care center because of his behaviors, the adoptive mother contacted Macomb Family Services for help. The child was described as "too active," "disruptive to the classroom," "disobedient," and "angry." He was also physically aggressive to other children. Through observation and in-depth conversations with the mother, the social emotional consultant determined that many of the behaviors were related to poor attachment between the mother and her adopted child. Using evidence-based Theraplay techniques to address relationship issues and engaging self-regulation skill building techniques, the consultant and the family found great success in only eight sessions. When the work terminated, the mother and child were more connected and enjoyed each other's company more. The child was cooperative in his new child care setting and able to engage in the classroom activities. He was better able to regulate his activity level as well. The post-DECA showed statistically significant improvement in four areas. The one area which did not show improvement, Initiative, had been in the typical range and so no improvement was needed.

### *Helping Family Set a Positive Home Environment*

A Social Emotional Consultant was asked to assess a two-year old who had already been identified as qualifying for speech services. However, the school district said he was too dangerous to attend a classroom setting due to his aggression. It was reported that the child frequently hit, pinched, screamed, and spit, including hitting his parents. His parents said they were afraid to take the child places, including the necessary trip to the grocery store, because they were unable to control him during his frequent tantrums. They also expressed frustration that he slept in their bed nightly, and they were unable to put him to bed at an appropriate time without his screaming, kicking, and hitting. The Social Emotional Consultant explored the child's frustration over not being able to verbalize his needs, how the parent's acquiescence to his behaviors continued the cycle of behavior, and healthy child development. Through supporting the parents in setting healthy expectations and using positive discipline, the family has seen a significant improvement in behavior and reached their goals. The child, now three, sleeps in his own bed nightly and goes to bed easily, he is potty trained, hitting and tantrums have decreased from several times a day to once every few months, and the family is able to enjoy time together. He started with a minimum amount of time in the classroom and then progressed to a full (3 hour) day and even rode the school bus.

## Implementation Evaluation Findings

This section of the report provides information on who was served by *Ready Children Ready Communities* and the types of services they received. It also provides information on the quality of program delivery, and on the challenges encountered and their resolution.[11]

### Program Reach and Characteristics of Participants

Since the SIF grant began, the program provided 903 Play and Learn group sessions, 1,846 PAT home visits, 845 social emotional home visits, 104 classroom social emotional consultations, and 72 parent group social emotional sessions (see Table 2). A total of 929 children received one or more of these services. There were 732 children who participated in Kindergarten literacy camp and more than 700 families at the 75 community events.

**Table 2:**
**Units of Program Activities (from program start through June 30, 2017)**
**and Number of Families Served – Reported by Sites**

| Program Unit Type | Leaps & Bounds Family Services | Macomb Family Services | MISD |
|---|---|---|---|
| Play and Learn Groups | 479 sessions | 170 sessions | 254 sessions |
| PAT Home Visits | 1,830 visits | | 16 visits |
| Social Emotional Visits | | 845 visits,<br>13 classroom groups (~8 sessions each), and<br>9 CSEFEL parent groups (~6 sessions each) | |
| Total N of families served in primary interventions | 759 | | |
| Total N of children served in primary interventions | 929 | | |
| Other services | | | |
| Outreach Activities[12] | 75 activities serving over 2000 children and parents | | |
| Kindergarten Literacy Camp | | | 47 classes of ~16 children each<br>(~ 752 children total) |

[11] The first year of evaluation activities focused on defining measures, designing instruments, establishing data collection and data processing procedures, and creating an evaluation database. The evaluation was successful in all of these activities, as described in the year one (baseline) evaluation report. Data collection followed the established processes for the subsequent years. Detailed information about the evaluation methodology is contained in the Technical Appendix.

[12] Outreach activities does not include flyer distribution and email blasts.

Table 3 shows the statistics on the ages of the children served. The median age of children was 3 years old.

**Table 3:**
**Age of Children Served**

| | Age of Children Served (N=921) |
|---|---|
| Minimum | 0 |
| Maximum | 6 |
| Median | 3.37 |
| Mean | 3.17 |
| Standard Deviation | 1.49 |

At enrollment into *Ready Children Ready Communities*, 61% percent of the children served had one or more literacy risk factors that are used by the State of Michigan to identify high-risk families. Table 4 shows the number and percent within each group who were reported to have each risk factor. Most report to be low income families (58%) and almost a quarter report parental low educational attainment (24%) and a primary home language other than English (25%). The other four risk areas apply to 4%-18% of children served.

**Table 4:**
**Risk Factors of Population Served**
**(N=915)**

| | Total |
|---|---|
| Low family income | 58% |
| Parent/s with low educational attainment | 24% |
| Primary home language other than English | 25% |
| Environmental risk | 18% |
| Diagnosed disability or identified developmental delay | 8% |
| Severe or challenging behavior | 6% |
| Abuse/neglect of child or parent | 4% |

## Development Delay Screenings and Referrals

Approximately 96% of PAT home visit children were screened for developmental delay using the ASQ – exceeding the 80% targeted by the grant. Children are screened at their first or second home visit. When children are not screened, typically it is due to the family not continuing beyond the first visit.

## Fidelity of PAT Home Visit Implementation

Fidelity of PAT Home Visit implementation was assessed during the first year of this evaluation. In addition to the regular supervision described above, an early childhood education expert observed staff conducting home visits for each PAT home educator. The observations found that the PAT home visits were being implemented with fidelity.[13] There has been one new staff person since the first fidelity assessment. The expert's observation of this new PAT home educator also concluded that this staff is implementing PAT home visits with fidelity. [14]

## ***Challenges in Implementing PAT Home Visits and their Resolution***

Across the years, parents involved in PAT home visits completed a short open-ended survey to evaluate the quality of the home visit services. Results reveal that, generally, parents were grateful for the home visit activities and what staff taught them about literacy activities to do with their children. They appreciated the resources that the home visit staff provided like books, teaching them songs, and a parent handout on useful and relevant information. Parents appreciated how staff engaged with their child and acknowledged that they now understand better how their children learn. Parents reported learning about their child's development and how to support their child's growth. They reported learning ways to teach their child to read or to encourage their child in taking the initiative to do things on their own.

Very few comments were made about what to change. A few suggestions were for more visits or for staff to spend more time visiting. A few suggestions were for more work on behavior management. One request was for more activities such as foreign languages and field trips.

One early problem identified with PAT home visiting was recruitment in an Arabic community located within the *Ready Children Ready Communities* target area. The home visit staff identified that the reason for the low recruitment was due to a lack of trust of strangers. This problem was overcome by Arabic speaking staff doing outreach in doctors' offices and WIC programs, and by identifying one gatekeeper, a grandmother in the community, who referred families for home visits (as well as for Play and Learn Groups). The success in reaching the Arabic community is also evidenced by the fact that one school in

[13] The description of the fidelity assessment and results are described in the first (baseline) evaluation report. See SPEC's year one (baseline) evaluation report, *Getting Ready to Measure Ready Children Ready Communities…Baseline SIF Evaluation Report* (July, 2014).

[14] Koons, E. (2017) *Home Visit Observations Synopsis*. March 21. Conducted for Leaps & Bounds Family Services. Internal report.

the Arabic neighborhood has allowed Play and Learn Groups to be conducted after school in a room that has been dedicated to supporting children and families.

The other challenge of providing home visits is serving parents who are not fluent in English. It is challenging for a staff who does not speak the primary language of the parent to conduct the home visit sessions. Staff indicated that they have been successful with home visit interventions in spite of the language differences, ultimately resorting to nonverbal communication skills. They also reported that they informally help parents to learn English during the home visits.

## Quality of Play and Learn Group Implementation

Absent a model for measuring fidelity of the Play and Learn Groups, a quality assessment based on early childhood development standards and best practices was created by the early childhood education expert who assessed the fidelity of the PAT home visits. In year one, the early childhood education expert observed each staff conducting a Play and Learn Group and determined that program implementation met the standards of quality early childhood education delivery.[15]

The quality of Play and Learn Group implementation was also assessed by surveys that Play and Learn Group parents completed on a quarterly basis. Table 5 shows the cumulative results from parent surveys regarding the quality of the Play and Learn Group sessions. As the table shows, the Play and Learn Group parents continually gave high ratings to their experiences with the program. Ninety percent or more of the survey responses were in agreement that the five dimensions of quality were present during the Play and Learn Group sessions. Almost all parents agreed that the facilitators helped them learn from each other (97%), that the session facilitator was friendly and respectful (99%), and that they learned something about how play encourages their child's development (97%). Slightly

**Table 5:**
**Play and Learn Group Parents' Perceptions of Quality of Program Delivery**
(N=340-341)

| Question/Response | N (%) |
|---|---|
| Facilitator was friendly and respectful towards adults | |
| % Agree | 338 (99%) |
| % Undecided | 1 (0%) |
| % Disagree | 2 (1%) |
| Facilitator helped us learn from each other | |
| % Agree | 332 (97%) |
| % Undecided | 8 (2%) |
| % Disagree | 1 (0%) |
| I learned something about how play encourages my child's development | |
| % Agree | 330 (97%) |
| % Undecided | 7 (2%) |
| % Disagree | 3 (1%) |
| I received a book or other resources after each week's Play and Learn I attended | |
| % Agree | 315 (93%) |
| % Undecided | 11 (3%) |
| % Disagree | 14 (4%) |
| Children were able to use materials we don't have/use at home | |
| % Agree | 311 (91%) |
| % Undecided | 19 (6%) |
| % Disagree | 11 (3%) |

[15] The description of the quality assessment criteria and results are described in the first (baseline) evaluation report, *Getting Ready to Measure Ready Children Ready Communities…Baseline SIF Evaluation Report* (July, 2014).

fewer (93%) agreed that they received a book or other resources after each week's session. Ninety-one percent agreed that the children were able to use materials that they don't have or use at home.

### ***Challenges in Implementing Play and Learn Groups and their Resolution***

In addition to the closed-ended items listed above, the quarterly parent survey included five open-ended questions that allow respondents to provide their own assessment of program quality:

- What did your child enjoy the most?
- What did you learn about your child's development?
- What would you have changed?
- Was something missing?
- What would you add?

Overall, parent responses to open-ended questions about Play and Learn Groups confirmed their satisfaction with the program. Results across all years of program implementation were largely consistent. Parents reported enjoying the program activities (arts and crafts, letters, reading, music or songs). They also reported appreciating the opportunities for interaction: children-to-children, children-to-parent, and children-to-instructors.

Across the data collection periods, parents reported an increased ability to recognize their child's needs and awareness of their child's skills or stage of development. Parents reported learning about ways to better recognize their child's needs and types of activities they enjoyed.

When asked what they would have changed, what they thought was missing, or what they would add to the program, for the most part parents made positive remarks like, "Nothing that I can think of, everything is perfect." Similarly, across the years, the major suggested area for improvement was to have more – more interactions, space, activities, time, and children participating. Over the years, parents expressed desire for more parenting information to use when at home or more parent training on child development including positive discipline, teamwork, potty training, language development, nutrition, and how to prepare a child for school.

Leaps & Bounds Family Services staff documented their experiences with Play and Learn Groups as well as the perceptions of some parents in *Leaps & Bounds Family Services: Successful strategies for improving early learning through home visits, parent resources and play-and-learn groups*.[16] One challenge documented in this book is the difficulty of implementing Play and Learn Groups in the agency's multi-cultural catchment area. In discussions with the evaluator about this challenge, staff reported that it was common to have within one Play and Learn Group non-English speaking mothers who speak Bengali as well as some who only speak Arabic. Also, Play and Learn Groups are now being conducted in neighborhood schools within the target area, including the small city of Hamtramck, which boasts of more than 30 different languages being spoken in their schools.[17]

[16] Dorsz, D. and Leaps & Bounds Family Services (2016) *Leaps & Bounds Family Services: Successful strategies for improving early learning through home visits, parent resources and play-and-learn groups*. Detroit: Leaps & Bounds Family Services.

[17] Personal communication of Hamtramck School District superintendent at a community event which the evaluator attended.

One resolution to this multi-lingualism challenge is that Leaps & Bounds Family Services utilizes bi-lingual, Arabic-English speaking staff. Regarding Bengali parents, Leaps & Bounds staff have managed to learn simple Bengali phrases and to teach simple English phrases to the parents. Staff also noted that parents can still teach literacy skills to their children by looking through picture books and discussing them with their children in their primary languages.

# Impact Evaluation Findings

## Impact Evaluation Design: Comparison of Groups

The primary research question of this evaluation was:

> *Do parents who participate in Home Visitation show greater outcomes than parents who only participate in Play and Learn Groups in terms of their perceived increase in: knowledge and understanding of the principles of early childhood development, how much they value of reading daily to their children, and their knowledge of how to access community resources?*

Table 6 shows the basic design for the impact evaluation. Parents who participated in home visits (N=110) were compared with parents who only participated in Play and Learn Groups (N=104). [18] The number of parents in each group was determined to be sufficient to detect a moderate effect size.[19]

**Table 6: Quasi-Experimental Research Design**

| | | Play and Learn Participant? | |
|---|---|---|---|
| | | Yes | No |
| Home Visit Participant? | Yes | N=53 | N=57 |
| | No | N=104 | |

The home visit group consisted of parents who received at least five home visits, regardless of whether they participated in Play and Learn Groups. As Table 6 shows, about half of the home visit group parents also participated in Play and Learn Groups. The comparison group consisted of parents who participated in at least four Play and Learn Group sessions provided through *Ready Children Ready Communities* but did not receive any home visits.

Missing data analyses were conducted on RPT survey data in order to determine whether or not data were Missing Completely at Random (MCAR), Missing at Random (MAR) or Not Missing at Random (NMAR). This included Little and Rubin's MCAR test (Little and Rubin, 1987[20]) and t-tests comparing baseline data for completers v. those with missing data. Missing data analyses revealed that there was less than 3% missing data on all outcome variables and that there were no significant differences between estimated means using an EM algorithm and sample means or variances using listwise

[18] Because Play and Learn Group participants complete the survey approximately every quarter, there are multiple surveys completed by parents. When there were multiple measures from parents, the last survey parents completed was used in this analysis. Removing multiple surveys, as well as four surveys where all scale score differences were negative, resulted in this N. Justification for removing surveys where all scale score differences were negative was that these parents likely reversed their scoring.

[19] The Technical Appendix provides information on the power calculation.

[20] Little, R. J. A., & Rubin, D. B. (1989). The analysis of social science data with missing values. *Sociological Methods and Research, 18 (2-3),* 292 – 326.

deletion. Therefore, we used pairwise deletion to maximize the number of cases available for any given analysis without the increased power demand required for imputed samples.

## Outcome Measurement

The Retrospective PreTest (RPT) design was used to measure improvement on the three major outcomes:

- Understanding of the principles of early childhood development
- Valuing of reading to their children daily
- Knowledge of how to access community resources

In the RPT design, only a post-program survey is completed by parents. On the survey, parents compare their perceptions "now" to what they believe their perceptions were "before" they participated in their respective program (home visit or Play and Learn Group). Justification for why RPT was selected as the most appropriate method for measuring outcomes is contained in the Technical Appendix.

Evaluation data collection began in 2013, after the program had started serving families. All evaluation data were collected by project staff. Data collection ended June 30, 2017.

**Justification for the Use of RPT as the Appropriate Measure of Parent Outcomes**

In this evaluation the decision was made to use the Retrospective Pre-Test (RPT) design within a pre-post treatment-comparison group design to measure changes in parents' attitudes and understanding regarding: the importance of reading to their children, child development, and community resources. CNCS reviewers have questioned the use of RPT as a valid assessment of the impact of the home visit intervention, inquiring why the evaluation did not use pretest-posttest comparisons that are more traditionally considered as preferred methods to assess change.

Our decision to use RPT as the methodology of choice was based on the research literature on the topic. The use of Retrospective Pre-Post Surveys (RPT) to assess change in participants' attitudes and perceptions goes back decades. Campbell and Stanley (1963) cite research as far back as a 1947 study by the U.S. War Department on the impact of integrating infantry platoons on racial attitudes of white soldiers. [See Campbell, D.T. and Stanley, J.C. (1963) *Experimental and Quasi-Experimental Designs for Research* Chicago, Rand McNally College Publishing Company.] Since then, copious evaluation literature has argued both for and against the use of RPT as superior to using traditional pre-post tests to assess change.

The literature on the use of RPT generally concludes that:

1. RPT is superior to pre-post tests when the outcomes of interest are perceptions and attitudes; pretest-posttest is superior when the outcomes of interest are objective measures of behaviors or knowledge. RPT removes two threats to internal validity that are present in pre-post tests when the expected changes are in attitudes and perceptions rather than objective behaviors or facts. [See, for example, the review of the literature in the introduction section of Taylor, P.J., Russ-Eft D.F. and Taylor, H. (2009) Gilding the Outcome by Tarnishing the Past: Inflationary Biases in Retrospective Pretests *American Journal of Evaluation* Vol. 30, No. 1 March pp. 31-43.]

   One such threat is response shift bias – that participants' understanding of the constructs being measured change as a result of the intervention. Thus, they are reflecting on different meanings of the construct when they complete the posttest than when they completed the pretest. In this evaluation, it was expected that parents' understanding of constructs such as child

development, valuing of reading and community resources would change as a result of participating in home visits and, to a lesser degree, from participating in play and learn groups. Thus, response shift bias would be minimized by the use of RPT.

The second similar thread to internal validity of pre-post tests is scale recalibration – that participants have an over-inflated perception of their understanding of concepts before the intervention and realize after the intervention how inflated those estimates were. In its extreme form, scale recalibration can lead to a boomerang effect in pretest-posttest data, where participants perceive themselves having less understanding of a construct at the posttest than they did at the pretest. In this evaluation, we saw scale recalibration as a threat to accurately assessing parents' awareness of community resources and perceived knowledge of child development. For example, it is possible that parents in both home visit and play and learn groups believed that they knew about the resources available in the community to help their children before their respective interventions began. Then, after learning about community resources through the home visit or play and learn group interventions, parents would come come to realize how little they actually knew about community services before participating in these interventions. This same argument can be made for parents' perceptions of their understanding of child development.

2. It is generally agreed that changes assessed using RPT tend to inflate the degree of change (inflationary bias), while changes assessed using traditional pretest-posttest assessment tend to underestimate the degree of change. [See, for example, Hill, L.G. and Betz, D.L. (2005) Revisiting the Retrospective Pretest, *American Journal of Evaluation*, Vol. 26, No. 4, December, pp. 501-517.] Authors of RPT research explain inflationary bias as caused by phenomena such as social desirability (participants wanting to give the response that others are expecting of them) and self enhancement (wanting to show oneself as having improved). [See for example Taylor et al (2009) cited above.] To test for the presence of inflationary bias, this evaluation included three counterfactual items in the RPT survey. Counterfactual items measure constructs that are not addressed by the intervention and, thus, should result in similar scores on the RPT pretest and posttest items. Changes in outcome measures accompanied by no change on counterfactual items is a testament to the lack of inflationary bias in the data.

In summary, for this evaluation we argue that RPT is the methodology of choice because: (a) it reduces the possibility of response shift bias and scale recalibration, and (b) both groups are equally likely to be affected by inflationary bias. The outcomes of interest to this evaluation are self-perceptions (increased understanding of child development, increased awareness of community resources, improved valuing of reading to children daily). Thus, RPT is superior over pretest-posttest in minimizing the response shift and scale recalibration biases inherent in pretest-posttest subjective measures of change. Further, since both groups in the evaluation received an intervention, it is likely that inflationary bias is present among parents in both the home visit and play and learn groups. There is no reason to suspect that social desirability and self enhancement happen any more or any less in the parents of the home visit group than in the play and learn group parents. In both cases, there are multiple weeks of intervention. In both cases, there is the possibility that parents will want to show they have improved because of participating in their respective interventions.

One additional point regarding the selection of measures for this evaluation. CNCS could have questioned why this evaluation elected to measure self-perceptions of outcomes rather than more

objective assessments of knowledge of child development and awareness of community resources. Could the evaluators have more objectively assessed knowledge of child development, for example, rather than asking parents' perceptions of how much they know about child development? To this question, we point out that the home visit and play and learn group interventions covered children ages 0 to 5. The issues of child development across these five years varies dramatically. Further, in some families there were multiple children within the age range of 0 to 5 who were included in the intervention. It was not possible to find a standardized assessment of knowledge of child development that would have been appropriate for parents of children of all ages between 0 and 5. Similarly, there is wide variation in the types of resources that parents in both intervention groups might need, and there are geographic differences in the types of community resources available to parents. Thus, it was not possible to create a more objective and standardized knowledge test, for example, by asking parents of their awareness of a specific list of services related to child development.

## Comparison of Risk Factors: Home Visit vs. Play and Learn Groups

Table 7 shows the percent of families in the two groups who were assessed as having each of the risk factors considered by the State of Michigan for assessing high-risk children. As the table shows, the Home Visit group demonstrated much higher risk on several of the factors: low income, environmental, low educational attainment and primary home language other than English. The higher risk of Home Visit group parents makes sense, since Play and Learn Groups were one mechanism for identifying parents who needed more intensive services than could be provided through the group-based intervention. These differences between the two groups were taken into account in the impact analyses by summing the risk factors into a cumulative risk score which was then used as the covariate in the repeated measures Analysis of Covariance (ANCOVA). Using repeated measures ANCOVA with the risk score as a covariate adjusts the group means based on the average level of risk for each family and thus reducing the potential bias. It is also important to note that the elevated risk of the treatement group (home visits) makes this test a more conservative test because the risk bias is in favor of the comparison (play and learn group).

**Table 7:**
**Risk Factors By Group**

| | Home Visit (N=110) | | Play and Learn (N=104) | |
|---|---|---|---|---|
| | # | % | # | % |
| Low family income | 99 | 90% | 40 | 38% |
| Environmental risk | 21 | 19% | 5 | 5% |
| Parent/s with low educational attainment | 79 | 72% | 5 | 5% |
| Primary home language other than English | 88 | 80% | 22 | 21% |
| Diagnosed disability or identified developmental delay | 7 | 6% | 10 | 10% |
| Severe or challenging behavior | 6 | 5% | 1 | 1% |
| Abuse/neglect of child or parent | 3 | 3% | 0 | 0% |

## Comparison of Groups on the Three Major Outcomes

The following pages describe the results of comparing the Home Visit group with the Play and Learn Group on the three major outcomes. The Technical Appendix presents the results from tests measuring the statistical properties of the outcome measures and the detailed results from the repeated measures ANCOVA analyses.

***Difference between home visit and Play and Learn parents in perceived change in valuing of reading to child daily***

The six items on the RPT survey measuring this outcome are:

1. I read to my child every day.
2. I understand the importance of reading the same stories again and again.
3. When I read stories to my child(ren) I ask what they think will happen next and why they think that.
4. My child sees me read.
5. We talk about the pictures when we look at a book.
6. When I'm outside with my child(ren) I point to words on buildings or street signs.

Parents in both groups perceived an increase in their valuing of reading to their children daily. As predicted, the Home Visit group changed more than the Play and Learn Group on this outcome.

Figure 2: RPT Program vs. Comparison Group Results:
Parent Reports of Valuing Reading to Child Daily

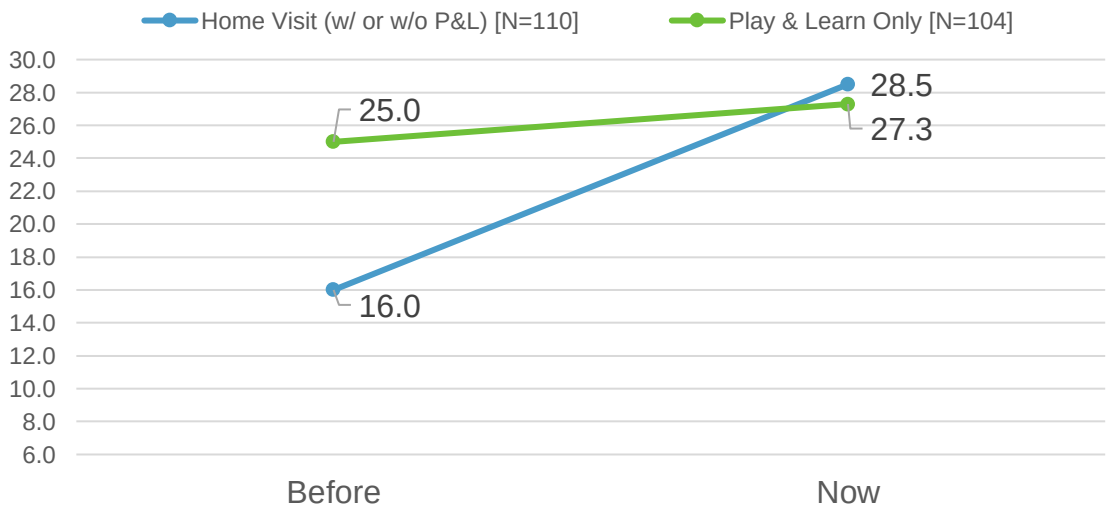



**Table 8:**
**Descriptive Statistics:**
**Value of Reading to Child Daily Scale Score**

| | Type | Mean | Std. Deviation | N |
|---|---|---|---|---|
| BEFORE | Home Visit Survey | 16.0 | 6.73 | 110 |
| | P&L Survey | 25.0 | 5.08 | 104 |
| | Total | 20.4 | 7.49 | 214 |
| NOW | Home Visit Survey | 28.5 | 3.05 | 110 |
| | P&L Survey | 27.3 | 3.22 | 104 |
| | Total | 27.9 | 3.19 | 214 |

***Difference between home visit and Play and Learn parents in perceived knowledge of how to access community resources***

The five items on the RPT survey measuring this outcome are:

1. I know how to access information on community events.
2. I know where to go if someone in my family needs educational services [e.g. preschool, speech and language].
3. I know what kinds of help are available in my community.
4. I know where to find information that I need to help my family [e.g. medical care, dental care].
5. I feel comfortable going to talk to someone to make sure my child's educational needs are met.

Parents in both groups perceived an increase in their knowledge of how to access community resources since participating in the intervention. As predicted, the Home Visit group changed more than the Play and Learn Group on this outcome.

**Figure 3:**
**RPT Program vs. Comparison Group Results:**
**Parent Reports of Knowledge of How to Access Community Resources**

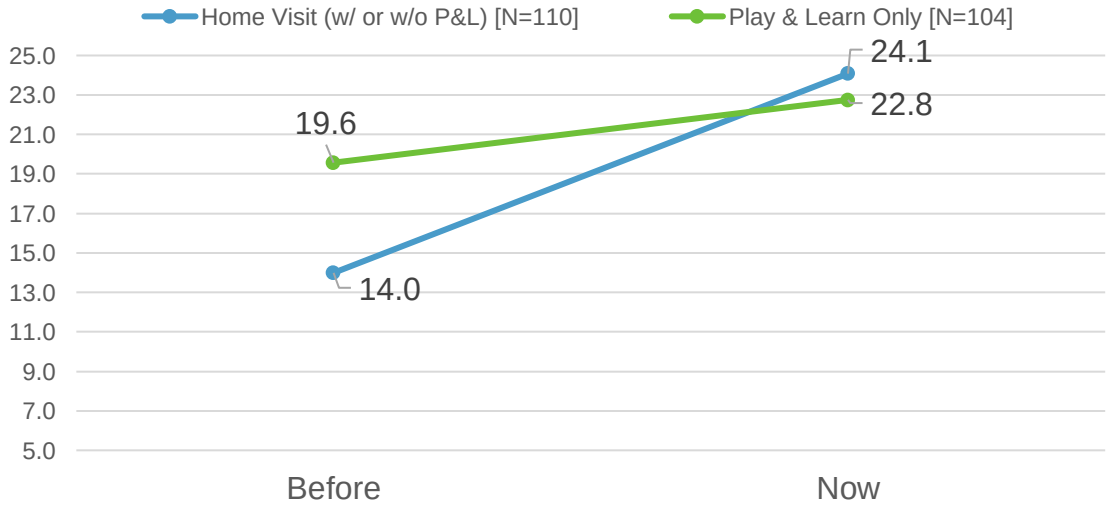



**Table 9:**
**Descriptive Statistics:**
**Knowledge of How to Access Community Resources Scale Score**

| | Type | Mean | Std. Deviation | N |
|---|---|---|---|---|
| BEFORE | Home Visit Survey | 14.0 | 5.92 | 110 |
| | P&L Survey | 19.6 | 4.75 | 104 |
| | Total | 16.7 | 6.06 | 214 |
| NOW | Home Visit Survey | 24.1 | 1.81 | 110 |
| | P&L Survey | 22.8 | 2.92 | 104 |
| | Total | 23.4 | 2.50 | 214 |

***Difference between home visit and Play and Learn parents in perceived understanding of principles of early childhood development***

The six items on the RPT survey measuring this outcome are:

1. I am aware of activities I can do to help my child learn and develop.
2. I believe that things I do every day will influence the kind of adult my child will become.
3. I feel confident in my role as my child's first teacher.
4. I feel confident in my ability to redirect my child's behavior.
5. I know how to guide my child in making friends.
6. I know what my child should be able to do for his age.

Parents in both groups perceived an increase in their understanding of the principles of early childhood development since participating in the interventions. As predicted, the Home Visit group changed more than the Play and Learn Group on this outcome.

**Figure 4:**
**RPT Program vs. Comparison Group Results: Parent Reports of Understanding the Principles of Early Childhood Development**

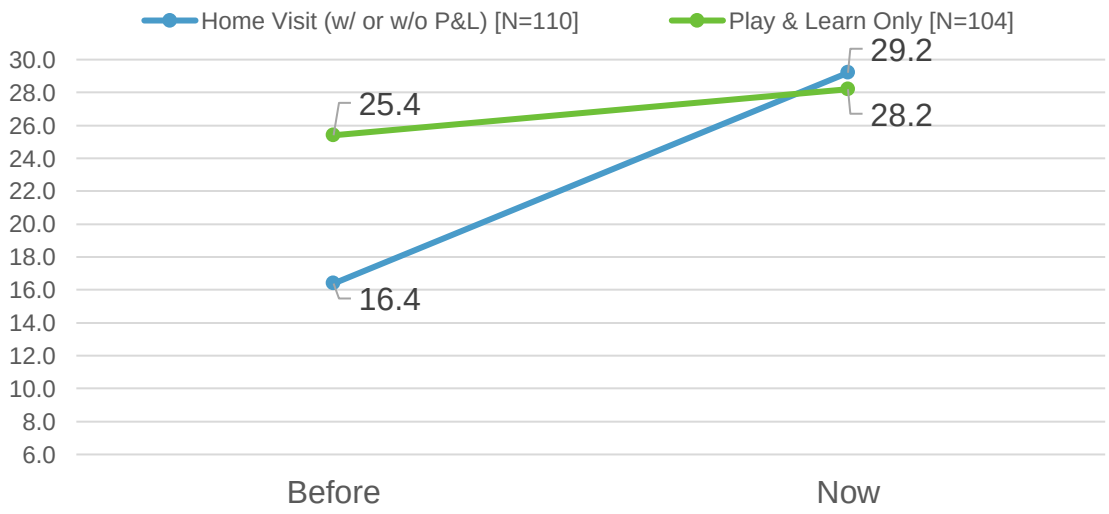



**Table 10:**
**Descriptive Statistics:**
**Understanding of the Principles of Early Child Development Scale Score**

| | Type | Mean | Std. Deviation | N |
|---|---|---|---|---|
| BEFORE | Home Visit Survey | 16.4 | 7.18 | 110 |
| | P&L Survey | 25.4 | 4.16 | 104 |
| | Total | 20.8 | 7.43 | 214 |
| NOW | Home Visit Survey | 29.2 | 1.85 | 110 |
| | P&L Survey | 28.2 | 2.38 | 104 |
| | Total | 28.7 | 2.18 | 214 |

### *Effect of English Language Speaking on Perceived Outcomes*

Given the diversity of the populations served by the *Ready Children Ready Communities* interventions, this evaluation examined whether the ability to speak English had an impact on parents' perceptions of outcomes. To examine the role of English speaking ability on parents' perceptions, the three main outcome analyses were computed using only those parents whose primary language *is* English. Results reveal that for all three outcomes, English-speaking parents in both groups perceived statistically the same degree of improvement in their perceptions of the three outcomes: valuing of reading to the child daily, awareness of community resources, and understanding the principles of child development. The difference between the two groups in the degree of change among English-speaking parents was not statistically significant.

These results suggest that parents whose primary language is not English perceive greater changes on the three outcomes than parents who are primarily English speaking, regardless of what interventions they receive. As Table 7 above shows, there were four times as many Home Visit parents than Play and Learn Group parents who primarily speak a language other than English in the home. So, even though non-English speaking as well as the other literacy risk factors were controlled for in the analyses, it appears that not speaking English was an important factor moderating the impact of the intervention. There are a number of possible reasons for this such as motivation to assimilate, valuing future employment for their children, viewing education as a means for future generational success, a more generative approach to thinking about future generations, etc. All of these remain empirical questions and are important considerations for future research. While these results do appear to suggest that non-English speaking status is a significant contributor to differences in RPT results, it is important to check that assumption in future studies. Further, because of the substantial differences in sample size when assessing the within group assessment of English v. non-English speaking families, the statistical significance differences between the two groups are likely misleading and effect-size comparison provide a more accurate assessment of the differences between these latter two groups.

## Impact Evaluation Design: Additional questions

In addition to examining impact by comparing the Home Visit and Play and Learn Group, the evaluation examined simple pre-post differences within each of the groups of parents. This evaluation set out to answer the following additional questions:

*Do parents report significantly higher ratings after participation in PAT home visits than they had before participation in:*

- *Understanding of the principles of early childhood development?*
- *Valuing of reading to their children daily?*
- *Knowledge of how to access community resources?*

*Do parents report significantly higher ratings after participation in Play and Learn Groups than they had before participation in:*

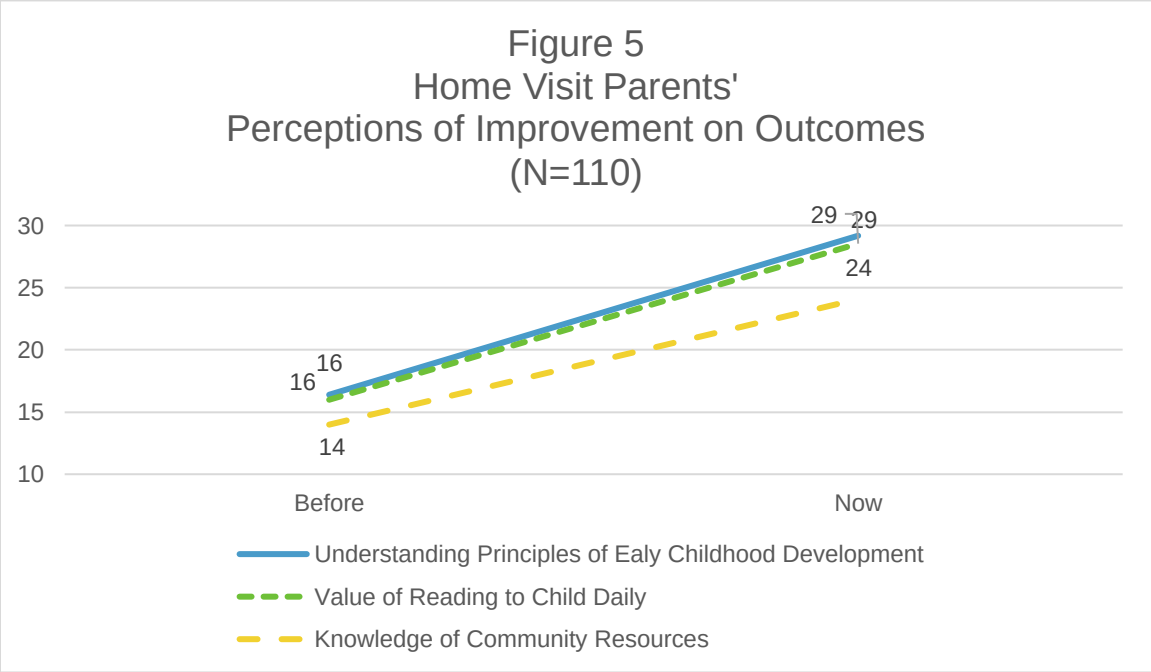
- *Understanding of the principles of early childhood development?*
- *Valuing of reading to their children daily?*
- *Knowledge of how to access community resources?*

*Is there a significant improvement from the first visit to the last visit in the quality and quantity of stimulation and support in the home environment for at least 65% of children whose parents participate in the home visits?*

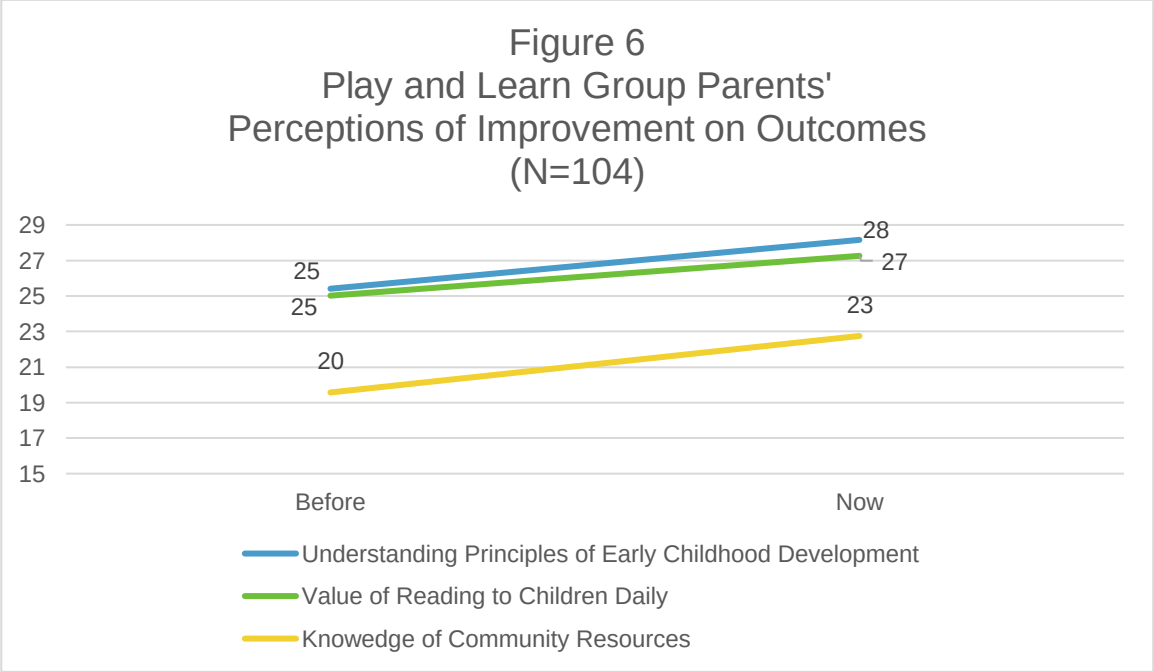
*Do at least 65% of children receiving intensive early childhood mental health services improve on at least one protective factor (initiative, self-control, attachment) or decrease on behavioral concerns?*

## Parents' Reports of Outcomes Achieved

The first two outcome evaluation questions are addressed by statistically comparing the "now" and "before" scores within each group of parents (paired t-tests). The detailed statistical results from these analyses are included in the Technical Appendix. The results reveal that Home Visit group parents reported a statistically significant improvement on all of the three outcomes resulting from participation in their respective interventions (see Figure 5).




The analyses reveal similar findings for parents who participated in Play and Learn Groups, but did not receive home visits. As Figure 6 shows, Play and Learn Group parents also perceive statistically significant improvements in all of the three outcomes, albeit to a lesser extent than the home visit parents.




Discussions with program staff corroborate parent's perceptions. Staff were easily able to provide examples illustrating how parents demonstrated these outcomes. "Stories from the Field" referenced above also provide qualitative evidence of these outcomes.

## Changes in the Home Literacy Environment

The Home Observation for Measurement of the Environment (HOME) was used as a measure of program outcomes for the Home Visit group parents. Two versions of the HOME were used in this evaluation because children ranged in age from 0 to 5. The two versions applicable to children in this evaluation were: Infant Toddler (six dimensions) and Early Childhood (eight dimensions).

The Infant Toddler HOME assesses six dimensions of the home literacy environment:

1. Responsivity: the extent of responsiveness of the parent to the child
2. Acceptance: parental acceptance of suboptimal behavior and avoidance of restriction and punishment
3. Organization: including regularity and predictability of the environment
4. Learning Materials: provision of appropriate play and learning materials
5. Involvement: extent of parental involvement
6. Variety: variety in daily stimulation

The Early Childhood HOME assesses eight dimensions of the home literacy environment:

1. Learning Materials: having age-appropriate learning materials and activities
2. Language Stimulation: child and caregiver communication indented to help the child learn language

3. Physical Environment: safety and cleanliness of the home and its appropriateness for development
4. Responsivity: the extent of responsiveness of the parent to the child
5. Academic Stimulation: parent encouraging the child's cognitive development
6. Modeling: parents showing desirable behaviors
7. Variety: variety in daily stimulation
8. Acceptance: parental acceptance of suboptimal behavior and avoidance of restriction and punishment

More information about HOME and the detailed statistical analyses for both versions of the HOME are contained in the Technical Appendix.

The HOME was used to assess pre-post changes in the family home environment after parents received a minimum of five home visits.[21] Statistical analyses of the changes reveal that there were significant pre-post improvements on all six dimensions of the Infant Toddler HOME and on six of the eight dimensions of the Early Childhood HOME.

Tables 11 and 12 show the percent of home environments of children that improved on each dimension of the HOME for the two age groups: infant/toddler and 3 to 5 years old. Overall, 100% of the homes of infant/toddler families showed improvement on one or more dimension of their home environments. Table 11 shows that between 55% and 88% of the homes of infants and toddlers improved on the individual HOME dimensions after receiving at least five home visit sessions.

**Table 11:**
**Infant Toddler HOME Results: % Improved by Scale**

| | Number and Percent of Families Showing Improvement on Each Dimension of HOME (N=64) | |
|---|---|---|
| | # | % |
| Responsivity | 54 | 84% |
| Acceptance | 48 | 75% |
| Organization | 35 | 55% |
| Learning Materials | 56 | 88% |
| Involvement | 51 | 80% |
| Variety | 53 | 83% |

[21] Although the intervention was targeted to a minimum of eight visits, the post-intervention data were collected after a minimum of five home visits in order to capture as many participating parents as possible. See the Technical Appendix for a discussion of this decision.

Table 12 shows that 38% to 82% of homes with three to five year olds improved on six of the Early Childhood HOME dimensions. These are the six dimensions where there were statistically significant improvements. Overall, 94% of the homes of three to five year olds improved on one or more of these six dimensions. For the two dimensions where the changes were not statistically significant (physical environment and acceptance), between 6% and 8% of the home environments improved.

**Table 12:**
**Early Childhood HOME Results: % improved by scale**

| | Number and Percent of Families Showing Improvement on Each Dimension of HOME (N=50) | |
|---|---|---|
| | # | % |
| Learning Materials | 40 | 80% |
| Language Stimulation | 22 | 44% |
| Physical Environment | 4 | 8%* |
| Responsivity | 25 | 50% |
| Academic Stimulation | 30 | 60% |
| Modeling | 19 | 38% |
| Variety | 41 | 82% |
| Acceptance | 3 | 6%* |

* These items did not reach statistical significance.

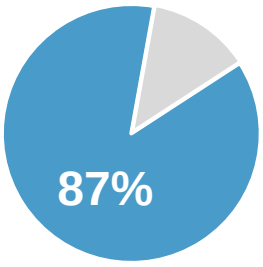
## Outcomes for Mental Health Consultation Services

*Devereux Early Childhood Assessment* (DECA) and the *DECA-Clinical* Form (DECA-C) were used to assess pre-post differences in the children whose teachers or family members received social emotional consultation. DECA measures the degree of social emotional or behavioral concerns for children ages 2

to 5. Detailed information about DECA is included in Technical Appendix. There are four factors measured by DECA: initiative, self-control, attachment and behavioral concerns.

DECA results for the *Ready Children Ready Communities* children revealed that 87% of the children receiving social emotional mental health consultations either improved on at least one protective factor or decreased on behavioral concerns (shown in Figure 7). Analysis of the pre-post differences across the four factors revealed that there were statistically significant improvements on all four factors. Detailed results from the statistical analyses are included in the Technical Appendix. For each of the four factors, between 45% to 52% of the children improved on the factor. For 24% of the children, all four factors improved.

**Figure 7:**
**% of children who met the mental health services goal**




## Qualitative Evidence of Outcomes Achieved

Ongoing discussions with program management and on-the-ground staff occurred regularly as part of the evaluation. Through these discussions, other evidence was found related to the expected outcomes of home visits and Play and Learn Groups. Evidence also emerged about unexpected outcomes from *Ready Children Ready Communities* for parents, for participating agencies and at the early childhood education systems level.

### ***Qualitative Evidence of Expected Outcomes for Parents***

Front line staff reported that more parents learn about and access community resources through interactions with each other during the Play and Learn Groups. Staff noted that during the group meetings, parents seem to be making friends, they do activities together, and share experiences with each other about referrals they received. One parent created a Facebook page to help parents support each other. Parents were also seen encouraging each other to follow through with referrals they were given to community resources.

Parents also learn about child development from other parents. As noted above, parents report learning about child development on the surveys that they completed. Staff reported that during Play and Learn Groups, parents ask each other about the behaviors and parenting challenges they are facing in their families and receive advice and ideas from each other based on their own successes with child development issues.

The social-emotional consultants see evidence of their work helping both teachers and the children in the classroom. Poor self-regulation and adaptive behaviors are exacerbated by teachers who are often overwhelmed and have little time for planning outside of classroom hours. Teachers often have many children in the room making it difficult to explore deeper reasons for challenging behavior of a single child when it occurs. The high demands on teachers to create structured environments in their classroom may hinder their ability to meet the various needs of children. The social emotional consultants reported helping by identifying and connecting children for further evaluation and

treatment (that have resulted in improvements in the classroom) as well as by coaching teachers on how to best work with the needs of individual children. Some of the "stories from the field" illustrate the effect of these consultations.

### ***Qualitative Evidence of Other Outcomes***

Discussions with front line staff and management, as well as evaluator observations, revealed that participation in *Ready Children Ready Communities* and, in particular this evaluation, resulted in unanticipated outcomes at the individual, agency and systems levels.

The primary unanticipated outcome for parents occurred at Leaps & Bounds Family Services which serves a multi-cultural geographic area. Staff from the agency reported that many parents are non-English speaking. Parents began to learn English during the home visits, and from reading simple one-word picture books with their children. Parents also were connected to elementary schools that are supportive of early childhood education.

Agency-level impact came largely from participating in this evaluation. This included:

- Evaluation tools and the database are being used to monitor progress beyond the SIF grant and used to support other funding efforts. The development of the data collection structures and positive attitudes toward them means that the evaluations within the agencies are likely to be sustained beyond the life of the SIF grant.
- Participating in the evaluation is causing agencies to look closer at quality when making program decisions. Home visit staff reported appreciating the ability to see evaluation findings and appreciating being asked for their opinions of what the findings mean. These discussions of the evaluation data resulted in making changes in their own, individual, work.
- Participation in the evaluation resulted in uncovering an article on gatekeeper value in recruitment which lead to a redesign of recruitment strategies. This redesign overcame the challenge of recruiting parents from the predominantly Arabic neighborhoods.

At the community level, there is evidence that the programs which originally started with SIF funding are expanding their reach, such as the following:

- Home visits expanded into the non-SIF community of Hamtramck, Michigan and one agency expanded its reach into other early childhood programming. For example, in Hamtramck's Arabic community, an elementary school now reserves a parent resource room, providing a continuum of services like access to group and Home Visit workshops.
- Agency staff reported that by holding Play and Learn Groups within local elementary schools, the kindergarten enrollment of those schools had increased. Increased enrollment in these and other SIF services required the school to open up another Kindergarten classroom for the program.
- In Detroit's African American community, a community center now has a dedicated parent resource room, provides monthly parenting workshops, and hosts Early Childhood Mondays.
- *Ready Children Ready Communities* persistently worked to reach underserved communities even when doors were initially closed to untrusted outsiders. In Hamtramck's Arabic community, the

PAT home visit staff successfully engaged the community using the gatekeeper model discovered through participating in the SIF grant, after trial and error showed that traditional recruiting methods of flyers and events didn't work.

- The collaborative efforts jump started through *Ready Children Ready Communities* resulted in faster recruitment opportunities within schools. Having MISD as the original lead agency enabled recruitment meetings to occur with social workers within Macomb County schools, enabled sharing of funding, and a bird's eye view of how the program benefits the District as a whole.
- There has been a growth of the Kindergarten camps originally started through *Ready Children Ready Communities*. The camps grew from even classrooms in the target area to 10 classrooms by year three of the evaluation. Overall, throughout the county, by the summer of 2016, there were in 25 classrooms.
- Socio-emotional mental health services have expanded through the State School Aid Act, Section 32p block grant.
- A PAT program regional affiliate was created in July 2015. The affiliate includes the three *Ready Children Ready Communities* agencies as well as other Michigan agencies. One benefit has been the use of PAT resources for a much more reasonable fee than if the agencies had to purchase membership individually.
- One *Ready Children Ready Communities* agency began facilitating parent workshops to increase parental education experiences beyond what happens within Play and Learn Groups and home visits. Workshop sessions include topics such as play materials and everyday home items, word play and kitchen art fun.
- One *Ready Children Ready Communities* agency expanded its outreach to private schools in the Spanish community and provided more Spanish services. One of the staff made connections within the community and was able to advertise agency services on a Spanish-speaking radio show.
- One *Ready Children Ready Communities* agency was requested to provide ASQ screening for a local school district. About 150 children were screened (about 50% of the eligible students) outside of the SIF grant.

## Outcomes from Kindergarten Literacy Camps

Evaluation results from 2015 found that prior to participating in the camp, 18%-38% of the children met expectations for their age in preschool skills of letters, sounds, print awareness, phonological awareness, and oral language. By post-camp, the percent of children who met expectations ranged from 39% to 62%; between 16% and 26% of the children improved on one or more of these dimensions. Evaluation results from 2016 were similar. Pre-camp, 28%-48% of the children met expectations for their age in letters, sounds, print awareness, phonological awareness, and oral language. By post-camp, the percent of children who met expectations ranged from 44% to 88%; between 16% and 40% of the children improved on one or more of these dimensions. Reports from MISD, who completed the evaluation of Kindergarten Literacy Camps, are contained in Technical Appendix.

## Conclusions

Results from this evaluation support the conclusion that both home visits and Play and Learn Groups impact parents' understanding of the principles of early childhood development, valuing of reading to children, and awareness of community resources. As expected and revealed by the impact evaluation design, home visits have a stronger impact on these parent outcomes than Play and Learn Groups.

While arguments have been made that the RPT over-inflates the impact of an intervention (see the Technical Appendix for a justification for the use of the RPT design in this evaluation), this upward bias in effect size is held constant across the Home Visit and Play and Learn Groups for this evaluation, hence reducing the potential impact on making mean level comparisons between the two groups. In other words, while RPT may be inflating the degree of change perceived by parents, the inflated perceptions are equally likely to occur in both the Home Visit and Play and Learn Group, making the *comparison* of the two groups valid within the RPT context. The RPT design with a control group and the use of vetted counterfactual items provides a similar level of control for threats to internal validity as a traditional prospective pre-test design with a comparison group (See justification in appendix A). Therefore, the results from this study are consistent with other quality quasi-experimental designs and provide moderate level evidence that PAT home visits are more impactful than Play and Learn Groups in enhancing parent attitudes and awareness, even for more high risk families.

In many ways the results from this evaluation advance the evidence base for these types of early childhood interventions. For home visits, both the impact analyses comparing the two groups and the pre-post improvements on the well-researched HOME assessment add to the already-strong evidence base about the impact of PAT Home Visitation. This evaluation demonstrates that PAT Home Visitation works in socially marginalized, multi-cultural communities in and around Detroit; and that the program can have an impact even with parents for whom English is not the primary language spoken at home. A pleasant surprise finding is that when PAT Home Visitation is implemented in a non-English speaking environment, parents can still "read" with their children without knowing the words, and may even improve their own English literacy skills. This latter finding is particularly important in laying the ground work for future studies focused on increases in parent literacy and non-verbal benefits of shared reading for parent-child relationships.

Importantly, this evaluation begins to build a foundation of evidence for the impact of Play and Learn Groups. The research literature has scant evidence about the value of group-based literacy interventions. A recent literature review examining the research on early childhood and parenting interventions from 2000 - 2017 found very little quantitative research examining the impact of play and learn groups and no high-quality research designs have been used. Both quantitative and qualitative data collected during this evaluation argue for the conclusion that parents believe they improve in their understanding of early childhood development and value reading to their children more after participating in Play and Learn Groups. Both parents and staff report that parents understand more about what community resources are available to them. Parents build informal networks through their involvement in Play and Learn Groups. These informal networks provide a venue for connecting parents to social capital and for sharing of information that could be vital to the health and well-being of their young children. Again this latter finding lays the groundwork for future empirical studies assessing the impact of play and learn group participation and the accrual of social capital by parents. This is especially important for lower income immigrant families, such as that served by this intervention, because of the already heightened social isolation and marginalization of these groups.

In some ways, the combination of interventions offered through *Ready Children Ready Communities* acts as a community-level triage for preventing problems with kindergarten readiness. The community education events, formal staff outreach to multi-cultural neighborhoods and schools, formal mental health screenings during home visitation, and informal observations by staff of parent-child interactions during Play and Learn Groups provide the primary level of prevention. They cast a wide net of professionals who can spot the possibility of literacy risk in children. From here, Play and Learn Groups offer secondary prevention to families who are experiencing one or a few literacy risk factors. The evaluation demonstrated that families in Play and Learn Groups do, in fact, exhibit some of the factors used by the state of Michigan to identify children with literacy risks. The evaluation results also demonstrate that the parents who are only in Play and Learn Groups have fewer risk factors than those who are referred to and participated in home visits. Home visits are the tertiary prevention services that aim to intervene with families exhibiting high levels of literacy risk. The evaluation data demonstrates that the home visit parents are much higher in literacy risk compared with their Play and Learn Group counterparts. The evaluation also demonstrates that the parents receiving home visits do report greater outcomes than their Play and Learn Group counterparts, and their home environments improve after participating in the PAT home visitation program.

These evaluation results have implications for those who determine human service utilization policies and the distribution of resources to communities. If early childhood interventions can be bundled together within a targeted geographic area, parents can be triaged into the level of prevention services that align with their needs. In this way, "waste" of human service intervention dollars can be reduced because parents are not receiving services that they do not need, which could easily be the case when only one type of service is offered throughout a community. These evaluation results demonstrate that the coupling of outreach, professional detection, and two intensity levels of intervention can be an efficient way to maximize public resources aimed at assuring that children come to school kindergarten ready.

**Ready Children Ready Communities**

# TECHNICAL APPENDIX

Appendix A: Technical Details of the Research Design and Analyses

## Rationale for Ready Children Ready Communities

Research on the importance of mental health interventions is clear. Experts agree that early intervention is more effective than later interventions,[22] and that "it is essential to treat young children's mental health problems within the context of their families, homes, and communities."[23] All of the *Ready Child Ready Communities* interventions (home visits, Play and Learn Groups, mental health screening and consultation) are based on the importance of early intervention occurring in the context of the child's own environment.

## Research Questions

The evaluation addressed confirmatory, exploratory and implementation questions.

### Confirmatory question

This evaluation provides moderate evidence addressing the following *confirmatory* question:

- Do parents who participate in PAT home visits show greater improvement than parents who only participate in Play and Learn Groups in perceived knowledge of the principles of early childhood development, value of reading daily to their children, and knowledge of how to access community resources?

### Exploratory questions

The evaluation provides preliminary evidence addressing the following *exploratory* questions:

- Do parents report significantly higher ratings after participation in PAT home visits than they had before participation in:
    - Understanding of the principles of early childhood development?
    - Valuing of reading to their children daily?
    - Knowledge of how to access community resources?

- Do parents report significantly higher ratings after participation in Play and Learn Groups than they had before participation in:
    - Understanding of the principles of early childhood development?
    - Valuing of reading to their children daily?
    - Knowledge of how to access community resources?

- Is there a statistically significant improvement from the first visit to the last visit in the quality and quantity of stimulation and support in the home environment for at least 65% of children whose parents participate in the PAT home visits?

- Do at least 65% of children receiving intensive early childhood mental health services improve on at least one protective factor (initiative, self-control, attachment) or decrease on at least one

[22] National Symposium on Early Childhood Science and Policy (undated) In Brief: The Impact of Early Adversity on Children's Development www.developingchild.harvard.edu.
[23] Harvard University Center on the Developing Child (undated) In Brief: Early Childhood Mental Health www.developingchild.harvard.edu.

behavioral concern (withdrawal/depression, emotional control problems, attention, aggression)?

### Implementation questions

This evaluation addresses the following implementation questions:

- Is the community outreach successful in recruiting the targeted number of children and parents for participation in PAT home visits, early childhood mental health services and community events?
- Did the program achieve its goal of screening 80% of PAT home visit children for developmental delay using the ASQ?
- Are the PAT home visits implemented with fidelity to the model?
- Are the Play and Learn Groups implemented with quality according to the criterion of best practices in early childhood education?
- What types of problems arise in implementing the PAT home visits and how are they resolved?
- What types of problems arise in implementing the Play and Learn Groups and how are they resolved?

# Study Approach and Methods

## Impact Study Design

The research hypothesis guiding the impact evaluation is that parents who participate in PAT home visits will improve more on the expected program outcomes than parents who participate only in Play and Learn Groups. The program outcomes for parents are:

- Better understanding of the principles of early childhood development
  - Greater valuing of reading to their children daily
- More knowledge of how to access community resources

The impact evaluation is linked to the exploratory research questions about whether preschoolers improve on these two outcomes after parents participate in PAT home visits:

- Improved literacy stimulation at home
- Improved general support at home

The impact evaluation is also linked to the exploratory question about whether developmental delays in social emotional health will be reduced for children receiving intensive mental health services.

If parents and children achieve these outcomes, more children in the community are expected to be academically ready for Kindergarten. *Ready Children Ready Communities* serves children aged 0 to 5 years. For many of these children Kindergarten will be years away. Therefore, Kindergarten readiness of children was not measured as part of the evaluation. More appropriately, it was the early detection of developmental delays (i.e. ASQ screening) that was assessed during this evaluation.

The major component of this evaluation that is of interest to SIF and CNCS is a quasi-experimental non-equivalent comparison group study that compares parents/guardians who participate in PAT home visits with parents who do not. See Table 1 for a graphic illustration of group assignment.

**Table 1: Quasi-Experimental Group Assignment**

| | | Play and Learn Participant? | |
|---|---|---|---|
| | | Yes | No |
| Home Visit Participant? | Yes | Program Group | Program Group |
| | No | *Comp Group* | |

The program group consists of parents who received at least five home visits, regardless of whether they participated in Play and Learn Groups. The comparison group consists of parents who participated in at least four Play and Learn Group sessions provided through *Ready Children Ready Communities* but did not receive PAT home visits.

## Implementation Study Design

The implementation evaluation focused on two aspects of program delivery, fidelity of the PAT home visits and quality of both home visits and Play and Learn Group sessions. Fidelity and quality results are described in detail in the year one (baseline) evaluation report, *Getting Ready to Measure Ready Children Ready Communities…Baseline SIF Evaluation Report (July, 2014)* and are provided in the following section:

### A. Implementation Evaluation Design and Planned Analyses

The implementation evaluation is addressing the following **exploratory questions**:

1. Is the community outreach successful in recruiting the targeted number of children and parents for participation in the PAT home visits, early childhood mental health services and community events?
2. Did the program achieve its goal of screening 80% of PAT home visit children for developmental delay (using the ASQ)?
3. Did 75% of children with developmental delays access appropriate developmental health services (individual or group counseling, consulting with teachers of students with developmental delays or socio-emotional behavior problems, referrals elsewhere for other risk factors)?
4. Are the PAT home visits implemented with fidelity to the model?
5. What types of problems arise in implementing the PAT home visits and how are they resolved?
6. What types of problems arise in implementing the Play & Learn Groups and how are they resolved?

### Quality Control Processes in Place

The evaluation has instituted a number of control processes to assure that the interventions are implemented with fidelity and that data are collected according to the plan. To assure proper implementation of the evaluation, an Evaluation Advisory Group was established which includes management from Leaps & Bounds Family Services, Macomb Family Services, the Macomb Intermediate School District, United Way of Southeast Michigan and SPEC. The Evaluation Advisory Group meets quarterly to guide the design of instruments and data collection procedures, to receive updates about program implementation, to discuss any problem areas related to the evaluation, and to interpret the implications of any new evaluation findings available during the quarter. In addition to these meetings, on a monthly basis the evaluation manager from SPEC holds telephone check-in calls with the management at each of the three implementing agencies to address any issues related to data collection.

To assure proper program implementation, the SIF Program Director holds meetings with management of the implementing agencies and, in separate meetings and as needed, with parent educators who are implementing the Play & Learn Groups and the PAT home visits. The SIF Program Director along with the MISD Early Childhood Consultant host a parent educator meeting every other month for programs funded through SIF as well as another Early Childhood grant. Time is spent at the beginning of each meeting reviewing any new procedures or protocols as well as addressing any issues or concerns they might have. This meeting also provides additional professional development to meet the needs the parent educators have in regards to meeting current family needs.

Annually, an early childhood education expert unaffiliated with the program observes a sample of the Play & Learn Groups and PAT home visits using a standard set of criteria (described below). The assessment results are provided, by individual and for the agency as a whole, to each agency. The results are also provided, by agency, to the SIF Program Director; overall results for the three agencies combined are provided to SPEC.

### Fidelity to program design

Fidelity of PAT home visits and Play & Learn Groups was assessed as part of the baseline evaluation activities. Fidelity was assessed by **a third-party, early childhood expert**. The fidelity assessor holds an M.A. in speech and language pathology and post-graduate courses in Early Childhood Education and Educational Leadership. She is a Credentialed Reliability Assessor for the High Scope Program Quality Assessment rating instrument. She has been consulting on early childhood education issues with public schools and social service agencies since 2003.

The early childhood expert observed one Play & Learn Group session of each facilitator and one PAT home visit of each parent educator. The assessor met with the home visitors before the visits to review typical practice, to gain an understanding of what to expect during the visit, and to ask questions about the curriculum that is being used, whether written materials are distributed, risk factors for the family, and other support services initiated for the family.

To assess the fidelity of the home visits to the PAT model, the early childhood expert reviewed the PAT program curriculum and created an observation checklist based on the five essential aspects of PAT home visit implementation:

- Reflections on prior visit
- Focus on parent-child interactions
- Development-centered parenting around sleep, attachment, discipline, health, transitions, safety and nutrition
- Discussion of family well-being (parental resilience, social emotional development, social connections, concrete support, knowledge of child development, parenting)
- Inclusion of literacy enrichment activities
- Discussion of next steps at closing

> "Sometimes I can tell how he is getting older, and how his development is changing."
> …Program participant

The checklist used to guide the observations is included in Appendix B.

There is no evidence-based curriculum for the Play & Learn Groups. Therefore, assessing fidelity is not applicable to the Play & Learn Groups. Rather, the quality of program delivery was assessed as described below.

### Quality of Program Delivery

In the absence of fidelity criteria, the quality of the Play & Learn Groups was assessed by the same early childhood education expert who observed the PAT home visits. Using her expertise as an early childhood education expert, the assessor commented on the following characteristic in assessing the **quality** of Play & Learn Groups:

- Presence of a written plan/focus for the session
- Extension of learning beyond the group
- Collection of parent feedback at the end of the session

- Provision of an appropriate learning environment
- Facilitation of appropriate parent-child interactions
- Parent-child interactions are rich
- Discussion of developmental domains
- Inclusion of literacy activities
- Promotion of positive parenting
- Appropriateness of materials used
- Provision of a rationale for each activity
- Respect shown for each family's uniqueness
- Modeling of development-centered parenting
- Assistance to parents in tracking their child's development
- Promotion of social connections
- Alerting parents to community resources and assistance in accessing them

Quality of program delivery was also assessed by **paper-and-pencil, self-report surveys** (referred to as program surveys) that PAT home visit and Play & Learn Group parents were asked to complete every quarter. The two versions of the program survey both focus on quality, but are different. The Play & Learn Group program survey contains open-ended questions asking parents what aspects of the program are important to keep, what could be eliminated, what should be changed, and what should be added. The Play & Learn Group program survey also includes five closed-ended questions that asked parents to indicate whether they agree, disagree or are undecided regarding whether:

- The session facilitator helped parents learn from each other
- The children in their care were able to use materials that they don't have/use at home
- The session facilitator was friendly and respectful towards the adults
- They learned something about how play encourages their child's development
- They received a book or other resources after each week's Play & Learn group

The PAT home visit program survey includes the following questions assessing quality of the home visits:

- What did you enjoy most about this program?
- What would you have changed about the program?
- Is there anything missing or is there something you wish could be added to this program?

### Participant satisfaction

Parent ratings of satisfaction with the program were not obtained as part of this evaluation. Because of the high social desirability bias expected in these kinds of measures, the Evaluation Advisory Group decided that more objective measures of program quality – including parent reports of program quality – were more

meaningful for the implementation evaluation than the likely high scores that would be achieved if parents were asked about their satisfaction with the program. Parent satisfaction was inferred from responses to the open-ended questions on the program survey in terms of parents' assessments of what they thought should be kept, changed, removed or added from the PAT home visits and the Play & Learn Groups.

## B. Implementation Data Analysis

Implementation data come from the Intake Form, Screening and Referral Tracker, Community Event reports, and the PAT home visit and Play & Learn Group program surveys (described below). **Frequency tables from the Intake Form data** are computed on the following items to assess the extent to which the program is reaching its screening, enrollment and referral targets:

- Total number of forms completed
- Number parents referred to programs within the three *Ready Children Ready Communities* agencies
- Number of parents referred to programs outside of the three agencies
- Type(s) of services parents are referred for
- Gender of parents
- Ethnic group of parents
- Zip codes of parents
- Parent involvement in other pre-school programs (Early Head Start, Great Start, Early Learning Center, Early On, Preschool, other SIF program)
- Family risk characteristics (as listed above)

**Frequency tables from the Screening and Referral Tracker** are computed to count:

- Number and types of referrals made each quarter among the three *Ready Children Ready Communities* agencies
- Number of and types of referrals made each quarter to other early intervention programs
- Number and types of screenings done each quarter
- Number of children already receiving services for their needs

**Cross-tabulations of the Intake Form data** are calculated to determine if there are any differences in risk characteristics between: (a) those who complete the Play & Learn Group and/or PAT home visit RPT parent surveys and those who do not, and (b) those who complete the post HOME observation and those who do not.

**Frequency tables of the Play & Learn Group program survey** closed-ended questions (described above) are used to describe program quality and any changes to program quality over time (data are analyzed quarterly).

**Descriptive statistics from the community outreach data** provided by the SIF Program Director are used to assess the number and types of outreach efforts and to estimate the number of people touched by these efforts.

**Narrative data** from the fidelity assessor's report of program fidelity provide information about program strengths and areas needing improvement.

**Content analysis** of responses to open-ended questions on the PAT home visit and Play & Learn Group program surveys identify areas of strength and areas needing improvement.

## Sampling, Measures, and Data Collection

### Sampling

The entire population of PAT home visit and Play and Learn Group parents who met the evaluation inclusion criteria and who completed the evaluation instruments were included in the impact evaluation. Children were selected for the program through agency referrals and family self-referral. Children were prioritized by risk factors. A total of 104 children were served through PAT home visits. Approximately 110 children participated in Play and Learn Groups.

Missing data analyses were conducted on RPT survey data in order to determine whether or not data were Missing Completely at Random (MCAR), Missing at Random (MAR) or Not Missing at Random (NMAR). This included Little and Rubin's MCAR test (Little and Rubin, 1987[24]) and t-tests comparing baseline data for completers v. those with missing data. Missing data analyses revealed that there was less than 3% missing data on all outcome variables and that there were no significant differences between estimated means using an EM algorithm and sample means or variances using listwise deletion. Therefore, we used pairwise deletion to maximize the number of cases available for any given analysis without the increased power demand required for imputed samples.

### Formation of Matched Groups

Because true randomization was not possible for this evaluation, we initially intended to use a propensity score matching method (see Guo & Fraser, 2013) to match home visit and play and learn only families on a series of demographic risk variables known to be associated with differences in both parent and child outcomes. Propensity scores were generated for Play and Learn Group and home visit parents using the following variables collected on the Intake Form that estimate risk of literacy problems:

- Low income
- Diagnosed disability or identified developmental delay
- Severe or challenging child behavior
- Primary home language other than English
- Low parental education attainment
- Abuse/neglect of child or parent
- Environmental risk (e.g., significant loss in family, chronic illness, teen parent, homelessness, etc.)

These seven variables are the same risk factors used throughout Michigan by the Michigan Department of Education's Great Start Readiness Program to rank children and determine

[24] Little, R. J. A., & Rubin, D. B. (1989). The analysis of social science data with missing values. *Sociological Methods and Research, 18 (2-3),* 292 – 326.

eligibility for the state-funded preschool program. The risk factor list was initially much longer (including more than 20 risk factors), but changed in the last seven years to create an easier system for enrolling children. It is important to note that many of the more specific risk factors from the larger list were combined to be part of the broader risk factors on the new list. However, the propensity score method did not find sufficient matches using a variety of methods and match variables, including making a cumulative risk variable and using the "before" RPT responses to yield an adequate evaluation sample. The program and comparison groups were found to be too different on risks for parent education, parent income, and a primary home language other than English and propensity scores were severely restricting the sample size (e.g., n=11). Therefore, the decision was made to use all comparison group parents in the analysis and to use repeated measures ANCOVA rather than ANOVA, controlling for cumulative risk score in all comparative analyses.

## Measures

The following instruments were used in this evaluation. See the year one (baseline) evaluation report for a copy of each of the instruments that were developed; copyrighted instruments are not included.

### 1. Intake (Enrollment) Form

An Intake Form was created for this evaluation which collected information about:

- The preschool child targeted by the interventions
- Legal parent/guardians
- Literacy risk factors (listed later)
- Consent to participate in the evaluation

### 2. PAT Home Visit Program Survey

The Home Visit Program Survey is a short, open-ended survey that staff asked parents to complete at the end of the series of PAT home visits. The survey was used to assess the quality of the PAT home visits from the perspectives of the parents.

### 3. Home Observation for Measurement of the Environment (HOME)

The Home Observation for Measurement of the Environment (HOME) was used as a measure of program outcomes for the PAT home visits. The HOME was used as a pre-post assessment of changes in children's family literacy environment after the intervention. The Administration for Children and Families offers the following description of the measure:

> "The Home Observation for Measurement of the Environment (HOME) Inventory is designed to measure the quality and extent of stimulation available to a child in the home environment. The Infant/Toddler HOME Inventory (IT-HOME) comprises 45 items that provide information from the child's perspective on stimuli found to affect children's cognitive development. Assessors make observations during home visits when the child is awake and engaged in activities typical for that time of the day and conduct an interview with a parent or guardian. The IT-HOME is organized into six subscales:
>
> (1) Responsivity: the extent of responsiveness of the parent to the child;

(2) Acceptance: parental acceptance of suboptimal behavior and avoidance of restriction and punishment;
(3) Organization: including regularity and predictability of the environment;
(4) Learning Materials: provision of appropriate play and learning materials;
(5) Involvement: extent of parental involvement;
(6) Variety in daily stimulation.

For the IT-HOME, 18 items are based on observation, 15 on interview, and 12 on either observation or interview."[25]

There is also an early childhood version of HOME for 3-6 year olds made up of 55 items and eight subscales. The PAT home visit staff used the version of HOME appropriate for the age(s) of child(ren) in the home except in instances where the child aged out of one version of HOME between the pre and posttest. In these cases, the earlier version of HOME was used for the posttest so that the appropriate change analysis could be performed.

The interrater reliability of the HOME assessments was assessed during the first year of this evaluation. Very high interrater reliability was found. Description of the reliability assessment and results can be found in the year one (baseline) evaluation report.

### 4. Devereux Early Childhood Assessment (DECA)

*Devereux Early Childhood Assessment* (DECA) and the *DECA-Clinical* Form (DECA-C) are pre-post assessments of resilience in preschoolers ages 2 to 5 with social and emotional problems or significant behavioral concerns. The DECA or DECA-C are administered, as appropriate, by staff for children entering or being assessed for social emotional consultation/intervention services. Use of the DECA allows for a pre-post outcome assessment of changes in resilience of children after participating in mental health services. The DECA is used by staff for assessment and goal planning. Staff use the DECA in instances where the mental health services are provided to individual children and when staff are working in consultation with teachers of an enrolled child. DECA creators report:

"Studies indicate that the DECA-C is a reliable instrument for assessing preschool children's behavioral concerns. The internal reliability estimates for each scale were calculated separately for each rater (parent or teacher). For parents, the alpha coefficients range from a low of .66 on Withdrawal/ Depression to a high of .78 on Emotional Control Problems, with a median of .76. For teachers, the alpha coefficients range from a low of .80 on Withdrawal/Depression to a high of .90 on Attention Problems, with a median of .88. The teacher alpha coefficients all meet or exceed the standard suggested by Bracken."[26]

DECA and DECA-C were used to address the exploratory question regarding the effectiveness of the intensive mental health interventions. Only the summative scores on each factor were provided to the evaluator, so it was not possible to test the DECA's psychometric properties for the participants in this evaluation.

[25] This description of the HOME Observation Tool was taken from: http://www.acf.hhs.gov/programs/opre/ehs/perf_measures/reports/resources_measuring/res_meas_phio.html.
[26] Retrieved from: http://www.devereux.org/site/DocServer/DECA-C-Booklet.pdf?docID=3262.

### 5. Ages and Stages Questionnaire

The Ages and Stages Questionnaire (ASQ) was used to screen children with developmental delays and other risk characteristics at enrollment into the PAT home visits. If the ASQ screen suggested developmental delays, the more in-depth ASQ:SE (Social-Emotional) was used to determine whether the family should be referred for mental health services. The evaluation did not analyze any ASQ data. Rather, the evaluation only recorded whether children were screened using the ASQ upon enrollment into the PAT home visits. Therefore, the psychometric properties of the ASQ were not assessed as part of this evaluation.

### 6. Play and Learn Program Survey

The Play and Learn Program Survey is a short survey administered once every quarter to all parents attending Play and Learn Groups including those who were not participating in the evaluation (because staff wanted feedback from all parents for continuous quality improvement purposes). The survey contains both open-ended and closed-ended questions to assess quality of program delivery from the parents' perspectives. The survey also asks parents to report their perceptions of how they used the information and materials from the Play and Learn Groups.

### 7. RPT Parent Survey

The RPT parent survey has two versions: Play and Learn Group and PAT home visit. The RPT questions were developed for this evaluation as the key measure of the three parent outcomes:

- Better understanding of the principles of early childhood development
- Greater valuing of reading to their children daily
- More knowledge of how to access community resources

The six items on the RPT survey measuring Understanding the Principles of Early Childhood Development are:

7. I am aware of activities I can do to help my child learn and develop.
8. I believe that things I do every day will influence the kind of adult my child will become.
9. I feel confident in my role as my child's first teacher.
10. I feel confident in my ability to redirect my child's behavior.
11. I know how to guide my child in making friends.
12. I know what my child should be able to do for his age.

The six items on the RPT survey measuring Valuing of Reading to the Child Daily are:

1. I read to my child every day.
2. I understand the importance of reading the same stories again and again.
3. When I read stories to my child(ren) I ask what they think will happen next and why they think that.
4. My child sees me read.
5. We talk about the pictures when we look at a book.
6. When I'm outside with my child(ren) I point to words on buildings or street signs.

The five items on the RPT survey measuring Knowledge of How to Access Community Resources are:

6. I know how to access information on community events.
7. I know where to go if someone in my family needs educational services [e.g. preschool, speech and language].
8. I know what kinds of help are available in my community.

9. I know where to find information that I need to help my family [e.g. medical care, dental care].
10. I feel comfortable going to talk to someone to make sure my child's educational needs are met.

The RPT parent survey also contains counterfactual items. The counterfactual is an outcome that should not occur as a function of the treatment but is reasonably associated with potential confounds and covariates. Counterfactual items can be used to estimate the extent of social desirability among survey respondents. The validity of the results is enhanced if participants change in the expected direction on the items measuring program outcomes, but do not change on the counterfactual items. If the counterfactual items show the same results as the data on expected outcomes, this could mean that certain participants are wanting to answer the survey questions in a way that shows outcomes in order to support the program staff. Three counterfactual items were placed on the surveys that both PAT home visit and Play and Learn Group participants completed. Since in the RPT design the participant is his/her own comparison, the use of counterfactual items reduces the threat to internal validity due to the use of non-equivalent comparison groups.[27] As these interventions are based on a well-developed logic model and theory of change, the counterfactual, as part of the broader theory based approach to evaluation[28] can be used as an effective additional means of control.

The three counterfactual items on the RPT survey are:

1. I know that it's important to teach my child to not talk to strangers.
2. I know that it's important to teach my child to not run into the street.
3. I know to teach my child to use and flush the toilet.

## 8. Psychometric Properties of the Three Outcome Measures

Data on the initial psychometric testing of RPT parent surveys are included in the year one (baseline) evaluation report. Psychometric testing using the final total sample size indicates that the measures continued to have adequate convergent reliability throughout the evaluation time period (as assessed by Coefficient Alpha). Table 2 shows the results of the reliability testing on the final sample of Play and Learn Group and home visit parents.

[27] For a more detailed discussion of this methodology see Trochim, W. (1985) Pattern Matching, Validity, and Conceptualization in Program Evaluation. *Evaluation Review* Vol. 9 No. 5, October pp. 575-604.

[28] See Lipsy, 1993; Weiss, C.H. (1997) Theory-Based Evaluation: Past, Present, and Future *New Directions in Evaluation,* no. 76, Winter, 1997.

**Table 2:**
**Reliability Test Results for RPT Surveys**

| Outcome | Standardized Alpha Coefficient for RPT "Before" items | | Standardized Alpha Coefficient for RPT "Now" items | |
|---|---|---|---|---|
| | PAT Home Visit Group (N=110) | Play and Learn Group (N=107) | PAT Home Visit Group (N=110) | Play and Learn Group (N=107) |
| Understanding principles of early childhood development | 0.957 | 0.866 | 0.847 | 0.815 |
| Valuing of reading to child daily | 0.942 | 0.887 | 0.897 | 0.768 |
| Knowledge of how to access community resources | 0.944 | 0.898 | 0.829 | 0.876 |

## 9. Justification for the Use of RPT as the Appropriate Research Design to Compare Parent Outcomes

Retrospective PreTest (RPT) data (parents comparing themselves "now" with "before" they participated in the intervention) was used to test the major study hypothesis, that the program group will report greater improvement than the comparison group in their:

- Understanding of the principles of early childhood development
- Valuing of reading to their children daily
- Knowledge of how to access community resources

For this evaluation the decision was made to use the RPT design to measure changes in parents' attitudes and understanding regarding: the importance of reading to their children, child development, and how to access community resources. CNCS reviewers have questioned the use of RPT as a valid assessment of the impact of the home visit intervention, inquiring why the evaluation did not use pretest-posttest comparisons that are more traditionally considered as preferred methods to assess change.

Our decision to use RPT as the methodology of choice was based on the research literature on the topic. The use of RPT to assess change in participants' attitudes and perceptions goes back decades. [29]

[29] Campbell, D.T. and Stanley, J. (1963) *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally. Deutsch, M. and Collins, M.E. (1951) *Interracial housing: A psychological evaluation of a social experiment.* Minneapolis: University of Minnesota Press. Goedhart, H. and Hoogstraten, J. (1992) The Retrospective Pretest and the Role of Pretest Information in Evaluative Studies *Psychological Reports* Vol. 70, pp.

Campbell and Stanley (1963)[30] cite research as far back as a 1947 study by the U.S. War Department on the impact of integrating infantry platoons on racial attitudes of white soldiers. Since then, copious evaluation literature has argued both for and against the use of RPT as superior to using traditional pre-post tests to assess change.

The literature on the use of RPT generally concludes that:

3. RPT is superior to pre-post tests when the outcomes of interest are perceptions and attitudes; pre-post test is superior when the outcomes of interest are objective measures of behaviors or knowledge. RPT removes two threats to internal validity that are present in pre-post tests when the expected changes are in attitudes and perceptions rather than objective behaviors or facts.[31]

   One such threat is response shift bias – that participants' understanding of the constructs being measured change as a result of the intervention. That is, participants are reflecting on different meanings of the construct when they complete the posttest than when they completed the pretest. In this evaluation, it was expected that parents' understanding of constructs such as child development, and valuing of reading and community resources would change as a result of participating in home visits and, to a lesser degree, from participating in Play and Learn Groups. Thus, response shift bias would be minimized by the use of RPT.

   The second threat to internal validity of pre-post tests is scale recalibration – that participants have an over-inflated perception of their understanding of concepts before the intervention and realize after the intervention how inflated those estimates were. In its extreme form, scale recalibration can lead to a boomerang effect in pretest-posttest data, where participants perceive themselves having less understanding of a construct at the posttest than they did at the pretest. In this evaluation, we saw scale recalibration as a threat to accurately assessing parents' awareness of community resources and perceived knowledge of child development. For example, it is possible that parents in both home visit and Play and Learn Groups believed that they knew about the resources available in the community to help their children before their respective interventions began. Then, after learning about community resources through the home visit or Play

699-704. Hawkins, S.A. and Hastie, R. (1990) Hindsight: Biased Judgments of Past Events after the Outcomes are Known *Psychological Bulletin*, Vol. 107 #3 pp 311-327. Hill, G.L. and Betz, D.L. (2005) Revisiting the Retrospective Pretest *American Journal of Evaluation* Vol. 26, No. 4, December pp. 501-517. Howard, G.S., Ralph, K.M., Gulanick, N.A., Maxwell, S.E., Nance, D.W. and Gerber, S.K. (1979) Internal Invalidity in Pretest-Posttest Self-Report Evaluations and a Re-evaluation of Retrospective Pretests *Applied Psychological Measurement* Vol. 3 #1 Winder pp 1-23. Pratt, C.C., McGuican, W.M. and Katsev, A.R. (2000) Measuring Program Outcomes: Using Retrospective Pretest Methodology *American Journal of Evaluation* Vol 21 #3, pp 341-394. Toedter, L.J., Lasker, J.N. and Campbell, D.T. (1990) The Comparison Group Problem in Bereavement Studies and the Retrospective Pretest *Evaluation Review* Vol. 14 #1, February pp. 75-90. Drennan, J., & Hyde, A. (2008). Controlling response shift bias: The use of pre-test design in the evaluation of a master's programme. *Assessment and Evaluation in Higher Education, 33(6),* 699-709.

[30] [See Campbell, D.T. and Stanley, J.C. (1963) *Experimental and Quasi-Experimental Designs for Research* Chicago, Rand McNally College Publishing Company.]

[31] [See, for example, the review of the literature in the introduction section of Taylor, P.J., Russ-Eft D.F. and Taylor, H. (2009) Gilding the Outcome by Tarnishing the Past: Inflationary Biases in Retrospective Pretests *American Journal of Evaluation* Vol. 30, No. 1 March pp. 31-43.]

and Learn Group interventions, parents would come to realize how little they actually knew about community services before participating in these interventions. This same argument can be made for parents' perceptions of their understanding of child development.

4. It is generally agreed that changes assessed using RPT tend to inflate the degree of change (inflationary bias), while changes assessed using traditional pretest-posttest assessment tend to underestimate the degree of change.[32] In a recent study using a sample of 411 families with child-welfare involvement a direct comparison was made between conventional pre-posts designs and RPT designs and similar to other research found that the substantive findings were consistent across the two approaches, but with larger effect sizes for the RPT design[33]. Authors of RPT research explain inflationary bias as caused by phenomena such as social desirability (participants wanting to give the response that others are expecting of them) and self enhancement (wanting to show oneself as having improved).[34] To test for the presence of inflationary bias, this evaluation included the three counterfactual items in the RPT survey (described above). Counterfactual items measure constructs that are not addressed by the intervention and, thus, should result in similar scores on the RPT pretest and posttest items. Changes in outcome measures accompanied by no change on counterfactual items is a testament to the lack of inflationary bias in the data.

For this evaluation we argue that RPT is the methodology of choice because: (a) it reduces the possibility of response shift bias and scale recalibration, and (b) both groups are equally likely to be affected by inflationary bias. The outcomes of interest to this evaluation are self-perceptions (increased understanding of child development, increased awareness of community resources, improved valuing of reading to children daily). Thus, RPT is superior over pretest-posttest in minimizing the response shift and scale recalibration biases inherent in pretest-posttest subjective measures of change. Further, since both groups in the evaluation received an intervention, it is likely that inflationary bias is present among parents in both the home visit and Play and Learn Groups. There is no reason to suspect that social desirability and self enhancement happen any more or any less in the parents of the home visit group than in the Play and Learn Group. In both cases, there are multiple weeks of intervention. In both cases, there is the possibility that parents will want to show they have improved because of participating in their respective interventions.

One additional point regarding the selection of measures for this evaluation. CNCS could have questioned why this evaluation elected to measure self-perceptions of outcomes rather than more objective assessments of knowledge of child development and awareness of community resources. Could the evaluators have more objectively assessed knowledge of child development, for example, rather than asking parents' perceptions of how much they know about child development? To this question, we point out that the home visit and Play and Learn Group interventions covered children ages 0 to 5 years. The issues of child development across these five years varies dramatically. Further, in some families there were multiple children within

[32] [See, for example, Hill, L.G. and Betz, D.L. (2005) Revisiting the Retrospective Pretest, *American Journal of Evaluation*, Vol. 26, No. 4, December, pp. 501-517.]

[33] Brook, J., Akin, B.A., Lloyd, M. et al. J Child Fam Stud (2016) 25: 2740. https://doi.org/10.1007/s10826-016-0446-1

[34] [See for example Taylor et al (2009) cited above.]

the age range of 0 to 5 who were included in the intervention. It was not possible to find a standardized assessment of knowledge of child development that would have been appropriate for parents of children of all ages between 0 and 5. Similarly, regarding knowledge of community resources, there is wide variation in the types of resources that parents in both intervention groups might need, and there are geographic differences in the types of community resources available to parents. Thus, it was not possible to create a more objective and standardized knowledge test, for example, by asking parents of their awareness of a specific list of services related to child development.

## 10. Testing of the Validity of RPT as Way to Measure Valuing of Reading to Child Daily Measure

The validity of the RPT methodology was further assessed by comparing now-then results on the RPT measure for "valuing reading" with pre-post results on a literacy scale created from a subset of items from the Early Childhood Literacy Scale (ECLES).[35] The premise of this analysis is that the validity of the RPT measure is confirmed if there is a significant correlation between the degree of change on the RPT items and the degree of change on pre-post items of ECLES. There were no validated assessments of Knowledge of Early Childhood Development or of Knowledge of How to Access Community Resources so similar analyses could not be performed for these outcomes.

Table 3 shows the items that comprise the two scales: ECLES and RPT measure of Valuing of Reading to Child Daily.

**Table 3:**
**ECLES vs RPT Survey Items for Valuing of Reading to Child Daily**

| ECLES ITEMS | RPT ITEMS |
|---|---|
| Items were asked on a Pre-Survey and a Post-Survey | Items were asked two ways on the same survey:<br>a) Please tell us how true this is for you now<br>b) Please tell us how true this was for you before you started (home visits/play and learn groups) |
| How often did you read to your child?<br>*On occasion, Several times a month, Weekly, Several times per week, or Daily* | I read to my child every day.<br>*5-point scale: (1) Not true at all, (5) Completely true* |

[35] Partridge, T. (2012). Reliability and Validity of the Early Childhood Literacy Scale. Unpublished Manuscript cited with permission of author.

| | |
|---|---|
| Did you read the same stories again and again?<br>*Never, Sometimes, Often, or Very often* | I understand the importance of reading the same stories again and again.<br>*5-point scale: (1) Not true at all, (5) Completely true* |
| Did your child ask questions about characters or events during story reading?<br>*Never, Rarely, Occasionally, A few times per story, or Frequently during a story* | When I read stories to my child I ask shat s/he thinks will happen next and why s/he thinks that.<br>*5-point scale: (1) Not true at all, (5) Completely true* |
| Did your child independently point to or talk about pictures when you read stories?<br>*Never, Rarely, Occasionally, A few times per story, or Frequently during a story* | We talk about the pictures when we look at a book.<br>*5-point scale: (1) Not true at all, (5) Completely true* |
| Did you point out signs and words such as restaurant names or street signs to your child (i.e., McDonald's arches, Pepsi Logo, etc.?)<br>*Never, Rarely, Weekly, Several times per week, or Daily.* | When I'm outside with my child I point to words on buildings or street signs.<br>*5-point scale: (1) Not true at all, (5) Completely true* |
| How many non-children's books did you own?<br>*Less than 5, 5-10, 11-15, 16-20, or more than 20.* | |

Scale scores were created with each set of items. Pearson correlations (r) and Spearman's Rho rank order correlations were calculated comparing the difference scores of the pre-post scale with the difference scores generated from the RPT scales. Because Likert scale scores behave in large samples like continuous random variables, they are technically ordinal in nature and providing both the Pearson's r and the Spearman's rho illustrates a convergence of findings irrespective of measurement scale. There were a total of 46 surveys with both RPT and pre-post ECLES data. Table 4 shows the results.

**Table 4:**
**Correlations between Pre-Post ECLES Items and RPT Change Scores for Valuing Reading**

| | Correlation | Asymp. Std. Error[a] | Approx. T[b] | Approx. Sig. |
|---|---|---|---|---|
| Pearson's r | .571 | .108 | 4.609 | .000[c] |
| Spearman rho | .468 | .111 | 3.517 | .001[c] |
| N of Valid Cases | 46 | | | |

a. Not assuming the null hypothesis
b. Using the asymptotic standard error assuming the null hypothesis

c. Based on normal approximation

As Table 4 shows, using both measures of correlation, the RPT and pre-post change results are significantly correlated. This suggests that the degree of change reported by parents on the pre-post ECLES items matches the order of these parents' reports of change on the RPT. Since the analysis of interest is in comparing the home visit group with the Play and Learn comparison group, these results support the validity of the RPT methodology as an adequate assessment for this evaluation.[36]

## 11. RPT results on counterfactual items

As discussed above, three counterfactual items were included on the RPT survey in order to control for threats to internal validity, such as social desirability. Table 5 shows the reliability statistics for these three items when they are combined into a scale.

**Table 5:**
**Reliability Statistics:**
**Counterfactual**

| | Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|---|
| BEFORE items | .956 | .956 | 3 |
| NOW items | .544 | .577 | 3 |

Because the three items were not intended to measure a single construct, high reliabilities on the scale of counterfactual items were not expected. As Table 5 reveals, in fact, the Cronbach's Alpha was high for the "before" items but low for the "now" items. A possible reason for this is that there was some social desirability on the part of the parents to show that they improved because of participating in the interventions.

Repeated measures ANCOVA comparing the program and comparison groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 6 and Figure 1 illustrate these findings. As Figure 1 also illustrates, parents in the Play and Learn Groups showed much less change on the counterfactual items. We explored these results with program staff. Staff indicated that the home visit group included a large number of non-English speaking families who emigrated from other countries. It is possible that these parents did, in fact, learn

[36] The RPT literature acknowledges that the size of RPT changes is typically larger than the size of pre-post changes due to a variety of factors (c.f., Taylor, P.J., Russ-Eft, D.F. and Taylor, H. (2009) Gilding the Outcome by Tarnishing the Past: Inflationary Biases in Retrospective Pretests. *American Journal of Evaluation* Vol. 30 No. 1 March, pp. 31-43). However, for the purposes of this evaluation, it is the *comparison* of the two groups that is of interest, rather than the absolute difference between the "now" and "then" ratings. Since RPT was used for both groups, we conclude that the measurement biases were the same in both groups. Thus, the difference between the two groups in their RPT scores is still a valid method for testing the effectiveness of the PAT home visit program.

some of the constructs embedded in the counterfactual items due to cultural differences in what their children are allowed to do, and attributed these learnings to participation in the home visits. For example, staff report that many of the PAT home visit parents come from countries where their markets and socializing are done on the street, so the counterfactual item of "I know that it's important to teach my child to not run into the street" may be an item that could change for these families. Similarly, children often are translators for their parents, and, in that process, may speak with strangers.

To explore this rationale, the ANCOVA on the counterfactual items was re-computed comparing PAT home visit families with the risk factor "primary home language is other than English" with those who did not have that risk factor. The assumption was made that families who do not speak English as their preferred language at home are likely to have immigrated from other countries. Figure 2 shows that those in homes where the primary language is not English (noted by "ESL" – English as a Second Language) had much lower "before" scores (mean score of 7.6), compared with PAT home visit families whose primary language is English (mean score of 13.9). This result supports the contention that the unexpectedly large difference in pre-post counterfactual ratings is due to the scores from the non-English speaking home visit participants and not due to greater social desirability among the home visit group families.

Another explanation for this pre-post difference among PAT home visit parents is that parents in the home visit group received the RPT parent survey during one of the last home visits and from the PAT home visit staff. Even though the staff followed the instructions of asking parents to place the completed survey in an envelope which they sealed, there may still have been psychological factors involved such as parents bonding more to the PAT home staff than to the Play and Learn staff and, therefore, wanting their survey results to demonstrate positive impact of the program. This explanation of the differences seems less likely than the first given the very high satisfaction ratings that the parents gave to the Play and Learn Groups, and the fact that many of the parents remained with the Play and Learn Groups for multiple sessions.

**Table 6:**
**Tests of Within-Subjects Contrasts**
**Home Visit vs. Play and Learn Group**
**Measure: Counterfactual Items**

| | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|---|---|---|
| Main Effect | 34.46 | 1 | 34.46 | 7.94 | .005 | .036 | 7.94 | .801 |
| Group*Time | 98.65 | 1 | 98.65 | 22.74 | .000 | .097 | 22.74 | .997 |
| Risk | 133.97 | 1 | 133.97 | 30.88 | .000 | .128 | 30.88 | 1.000 |
| Error(LS) | 915.45 | 211 | 4.34 | | | | | |

a. Computed using alpha = .05

**Figure 1:**
**RPT Home Visit vs. Play and Learn Group Results:**
**Parent Reports on Counterfactual Scale**

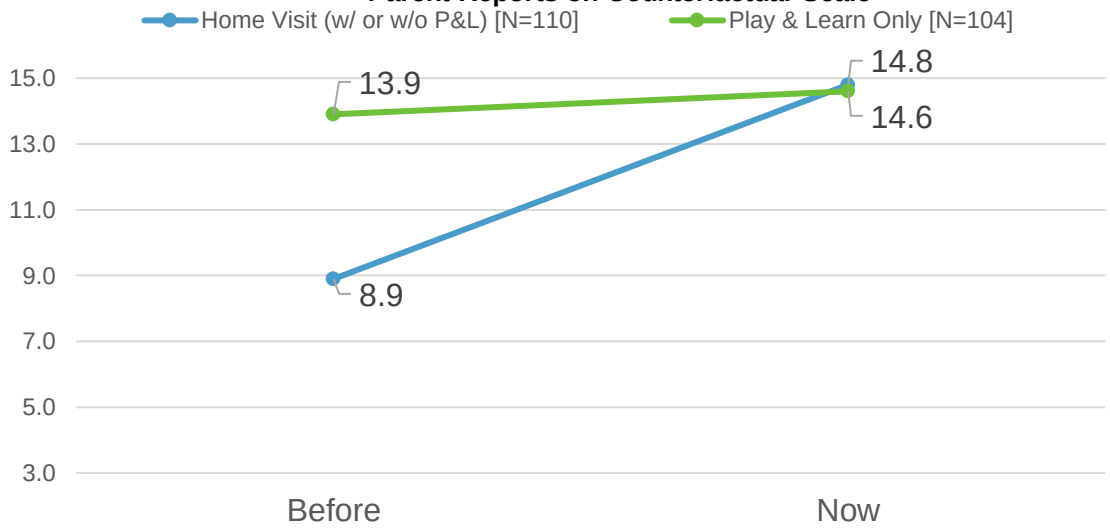



**Table 7:**
**Descriptive Statistics:**
**Home Visit and Play and Learn Groups**
**Counterfactual Scale Scores**

| | Type | Mean | Std. Deviation | N |
|---|---|---|---|---|
| BEFORE | Home Visit Survey | 8.9 | 4.15 | 110 |
| | P&L Survey | 13.9 | 2.11 | 104 |
| | Total | 11.3 | 4.17 | 214 |
| NOW | Home Visit Survey | 14.8 | .62 | 110 |
| | P&L Survey | 14.6 | 1.15 | 104 |
| | Total | 14.7 | .92 | 214 |

**Figure 2:**
**RPT Home Visit Results**
**ESL Parents vs. Parents without ESL Risk Factor**
**Parent Reports on Counterfactual Scale**

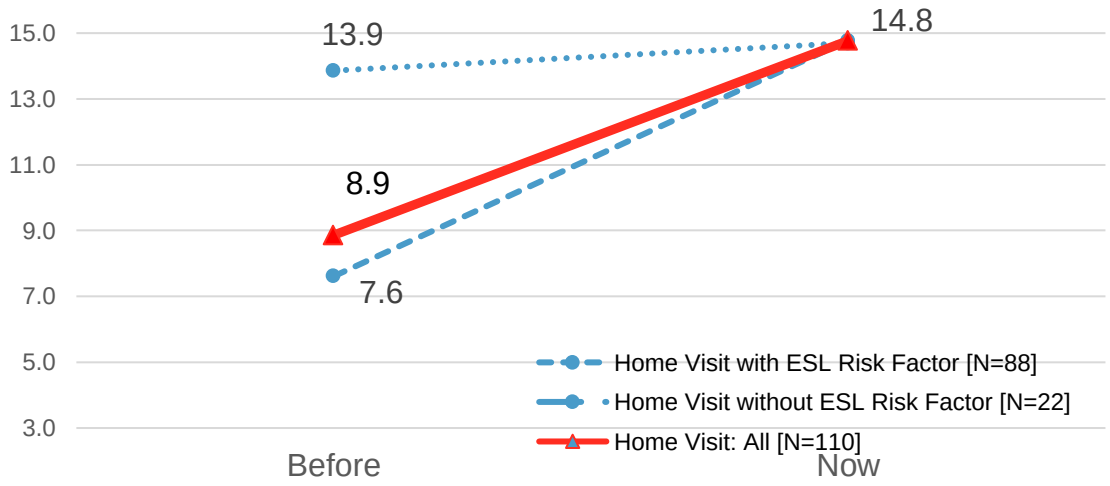



**Table 8:**
**Parents with ESL vs. Parents without ESL Risk Factor**
**Counterfactual Scale Scores**

| | Type | Mean | N | Std. Deviation |
|---|---|---|---|---|
| BEFORE | Home Visit Group with ESL Risk Factor | 7.6 | 88 | 3.45 |
| | Home Visit Group without the ESL Risk Factor | 13.9 | 22 | 2.66 |
| | Total | 9.36 | 110 | 3.93 |
| NOW | Home Visit Group with ESL Risk Factor | 14.8 | 88 | 0.58 |
| | Home Visit Group without the ESL Risk Factor | 14.7 | 22 | 0.77 |
| | Total | 14.7 | 110 | 0.68 |

## Additional analysis regarding English-Speaking Parents

**KNOWLEDGE OF COMMUNITY RESOURCES**

**Descriptive Statistics**

| Type | | Mean | Std. Deviation | N |
|---|---|---|---|---|
| BEFORE MISD_ Knowledge of Community Resources | Home Visit Survey | 19.7727 | 5.16335 | 22 |
| | P&L Survey | 20.2500 | 4.67872 | 82 |
| | Total | 20.1490 | 4.76327 | 104 |
| NOW MISD_Knowledge of Community Resources | Home Visit Survey | 22.7727 | 2.38910 | 22 |
| | P&L Survey | 22.9878 | 2.79988 | 82 |
| | Total | 22.9423 | 2.70859 | 104 |

**Tests of Within-Subjects Contrasts**

Measure:MEASURE_1

| Source | CommRes | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|---|---|---|---|
| CommRes | Linear | 135.459 | 1 | 135.459 | 19.601 | .000 | .163 | 19.601 | .992 |
| CommRes * riskcum | Linear | 2.325 | 1 | 2.325 | .336 | .563 | .003 | .336 | .089 |
| CommRes * Type | Linear | .045 | 1 | .045 | .007 | .936 | .000 | .007 | .051 |
| Error(CommRes) | Linear | 697.981 | 101 | 6.911 | | | | | |

**UNDERSTANDING OF CHILD DEVELOPMENT**

**Descriptive Statistics**

| | Type | Mean | Std. Deviation | N |
|---|---|---|---|---|
| BEFORE MISD_Development Items | Home Visit Survey | 23.6364 | 5.77800 | 22 |
| | P&L Survey | 26.0537 | 3.88400 | 82 |
| | Total | 25.5423 | 4.43330 | 104 |
| NOW MISD_Development Items | Home Visit Survey | 27.9545 | 2.41971 | 22 |
| | P&L Survey | 28.5098 | 1.96994 | 82 |
| | Total | 28.3923 | 2.07302 | 104 |

**Tests of Within-Subjects Contrasts**

Measure:MEASURE_1

| Source | Dev | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|---|---|---|---|
| Dev | Linear | 139.126 | 1 | 139.126 | 20.456 | .000 | .168 | 20.456 | .994 |
| Dev * riskcum | Linear | 22.421 | 1 | 22.421 | 3.297 | .072 | .032 | 3.297 | .436 |
| Dev * Type | Linear | 12.716 | 1 | 12.716 | 1.870 | .175 | .018 | 1.870 | .273 |
| Error(Dev) | Linear | 686.936 | 101 | 6.801 | | | | | |

**VALUE OF READING TO CHILD DAILY**

**Descriptive Statistics**

| | Type | Mean | Std. Deviation | N |
|---|---|---|---|---|
| BEFORE MISD_ Literacy skills Items | Home Visit Survey | 21.1364 | 6.90269 | 22 |
| | P&L Survey | 25.5488 | 4.94950 | 82 |
| | Total | 24.6154 | 5.67965 | 104 |
| NOW MISD_Literacy skills Items | Home Visit Survey | 25.3182 | 4.32475 | 22 |
| | P&L Survey | 27.4610 | 3.12105 | 82 |
| | Total | 27.0077 | 3.49956 | 104 |

**Tests of Within-Subjects Contrasts**

Measure:MEASURE_1

| Source | LS | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|---|---|---|---|
| LS | Linear | 103.678 | 1 | 103.678 | 15.395 | .000 | .132 | 15.395 | .973 |
| LS * riskcum | Linear | 24.067 | 1 | 24.067 | 3.574 | .062 | .034 | 3.574 | .465 |
| LS * Type | Linear | 21.513 | 1 | 21.513 | 3.195 | .077 | .031 | 3.195 | .425 |
| Error(LS) | Linear | 680.173 | 101 | 6.734 | | | | | |

## Data Collection

For the home visit group, the Intake Form data were collected at enrollment if the parent did not already participate in Play and Learn Groups. For the Play and Learn Groups, Intake Form data were collected either after the parent completed four sessions or at enrollment (and then parents were assigned to the evaluation after they completed four sessions).

Baseline and end-of-program HOME data were collected by the PAT home visit staff who also administered the PAT home visit RPT parent survey and program survey to parents after at least five home visits or at the end of the home visit cycle (typically but not always eight visits). The number of completed PAT home visit RPT parent surveys is lower than the number served due to several factors. Some parents dropped out before completing at least five visits. Also, staff reported that sometimes parents would cancel the last visit, so the surveys would not be completed. Since learning this, staff started administering the survey prior to the last visit, but after at least five sessions to ensure a higher response on the RPT parent survey.

Play and Learn Group parents who could read either English or Arabic and who participated in four or more sessions were asked to complete the RPT parent survey at quarterly intervals. The translation-back translation processes used to create the Arabic version of the RPT survey is explained in the Year One (baseline) evaluation report. Each quarter, one week was designated for surveying Play and Learn Group parents. Play and Learn Group staff collected RPT parent survey data from eligible participants during that week. Processes in place to protect parent privacy are described in the section below entitled, *Study Logistics Part A. Protection of Human Subjects.*

When there were multiple measures from parents, the last survey parents completed was used in this preliminary analysis. Removing multiple surveys, as well as four surveys where all scale score differences were negative, resulted in the final evaluation sample. Justification for removing surveys where all scale score differences were negative was that these parents likely reversed their scoring on the survey.

# Statistical Analysis of Impacts

## Analytic Approach

Repeated measures ANOVA was the originally planned approach to analyze the RPT data, looking for the statistical significance of the group-by-time interaction, with the home visit group expected to show greater before-now change than the propensity score-matched Play and Learn Group participants on self-assessments of the three outcome measures. Because they may remain in the Play and Learn Groups as long as they liked, these parents could complete more than one RPT survey. The last survey completed by parents who only participated in Play and Learn was used in the analysis; the survey completed at the end of the home visit series was used in the analysis for the Home Visit group. As described above, propensity score matching was to be used to reduce selection bias. As also described above, this analytic approach needed to be revised because of the propensity score matching results. Instead, repeated measures Analysis of Covariance (ANCOVA) was used as the major analytic approach with the cumulative score on the seven literacy risk factors used as the covariate. This approach is a suitable alternative because, even though the Home Visit group and the Play and Learn group differed on three of these risk factors (low family income, low parent

education, and English as the primary language in the home) the variance associated with these group differences is statistically removed from the assessment of between group differences in outcomes. Any potential biases associated with level of risk and/or level of motivation to seek services are eliminated from the analyses. Furthermore, analyses using smaller samples in which only individuals in both the Home Visit and Play and Learn Groups with one or more of these risk factors were analyzed revealed that the nominal interpretation of the findings did not change. The Home Visit group showed greater improvement than the Play and Learn Group on all outcomes.

Prior to testing for impact, descriptive statistics were computed for all variables in the study. Data were screened to assess distributional assumptions and the presence of outliers. Skew and kurtosis values were computed by dividing each parameter by its corresponding standard error to test for significant deviations from normality. Because this ratio yields a t-value, any ratio ≥ 1.96 is considered to be a significant deviation from normality. All variables determined to be significantly skewed were to be transformed using a natural log transformation. Data were also screened for outliers using a standard z-score cut off value of +/- 3.29 ($\alpha = .001$). The stem and leaf and box plots were examined using SPSS. These analyses revealed that none of the outcome variables significantly violated the assumptions of normality and thus were not transformed.

### Unit of Assignment and Analysis

Data were analyzed at the parent or child level, depending on the instrument.

### Treatment of Missing Data

It was anticipated that retention of program participants in the evaluation would parallel their retention in the program. Various methods were used to address missing data.

To test the self-selection bias resulting from program dropout, Home Visit parents who dropped out before the post-visit HOME observation were compared with parents who completed the post-visit HOME observation and/or the RPT parent survey on the same seven risk characteristics noted above. Findings indicate that there are significant differences on three of the seven risk factors between Home Visit parents who dropped out and those who completed five or more visits (see risk factors in blue text in Table 9). It appears that those with the greatest need tend to stay with the program. Families with the risk factors of low income, low educational attainment of parent, and primary home language other than English, tend to stay with the program versus those families who are not at risk on those three factors. From a program perspective, it is appropriate to funnel high risk families into this more intensive intervention.

**Table 9:**
**Comparing Dropouts vs. Home Visit RPT Survey Completers**
**On Seven Risk Factors**

| | Home Visit "Drop outs" Before the Post Assessment (N=46) | Home Visit Post-Assessment Parents (N=133) |
|---|---|---|
| | % at risk | % at risk |
| Low family income | 69% | 91%*** |
| Parents with low educational attainment | 22% | 71%*** |
| Primary home language other than English | 8% | 75%*** |
| Environmental risk | 30% | 31% |
| Diagnosed disability or identified developmental delay | 8% | 7% |
| Severe or challenging behavior | 5% | 4% |
| Abuse/neglect of child or parent | 0% | 3% |

*** p=0.000.

Dropout for the Play and Learn Group is not problematic for the evaluation because the "now" and "before" RPT data are collected at a single point in time, and are collected at quarterly intervals from any parents who attended four or more sessions.

Missing data analyses were conducted on RPT survey data in order to determine whether or not data were Missing Completely at Random (MCAR), Missing at Random (MAR) or Not Missing at Random (NMAR). This included Little and Rubin's MCAR test (Little and Rubin, 1987[37]) and t-tests comparing baseline data for completers v. those with missing data. Missing data analyses revealed that there was less than 3% missing data on all outcome variables and that there were no significant differences between estimated means using an EM algorithm and sample means or variances using listwise deletion. Therefore we used pairwise deletion to maximize the number of cases available for any given analysis without the increased power demand required for imputed samples.

## 12. Tests for Statistical Significance

The major test for statistical significance was the F-test at $p \leq 0.05$ level for the group-by-time interaction within a repeated measures ANCOVA analysis, controlling for cumulative risk.

[37] Little, R. J. A., & Rubin, D. B. (1989). The analysis of social science data with missing values. *Sociological Methods and Research, 18 (2-3),* 292 – 326.

## 13. Adjustment for Multiple Comparisons

The hypotheses in this evaluation constituted independent comparisons and as a result there was no familywise inflation of type I error.

## 14. Assessment of Effect Sizes

G*Power (v. 3.1.9.2) was used to estimate the minimum sample size required to achieve a power of .8 for a moderate effect size (f=.25) at an alpha of .05 is 98 families. This analysis resulted in an estimate of approximately 49 surveys needed per group to reach moderate power. In total, RPT surveys were collected from:

110 from PAT home visit participants
104 from Play and Learn Group participants

## 15. Tests of Within-Subjects Contrasts

Recall that the impact question for this evaluation was:

> Do parents who participate in PAT home visits show greater improvement than parents who only participate in Play and Learn Groups in perceived knowledge of the principles of early childhood development, value of reading daily to their children, and knowledge of how to access community resources?

### a) Valuing of Reading to Child Daily

Repeated measures ANCOVA comparing the Home Visit and Play and Learn Groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 10 presents these results.

**Table 10:**
**Tests of Within-Subjects Contrasts**
**Measure: Valuing of Reading to Child Daily**

| | Type III Sum of Squares | Df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|---|---|---|
| Main Effect | 312.65 | 1 | 312.65 | 21.81 | .000 | .094 | 21.81 | .996 |
| Group*Time | 452.35 | 1 | 452.35 | 31.56 | .000 | .130 | 31.56 | 1.000 |
| Risk | 429.20 | 1 | 429.20 | 29.95 | .000 | .124 | 29.95 | 1.000 |
| Error | 3024.27 | 211 | 14.33 | | | | | |

a. Computed using alpha = .05

### b) Knowledge of How to Access Community Resources

Repeated measures ANCOVA comparing the Home Visit and Play and Learn Groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 11 presents these results.

**Table 11:**
**Tests of Within-Subjects Contrasts**
**Measure: Knowledge of How to Access Community Resources**

| | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|---|---|---|
| Main Effect | 292.73 | 1 | 292.73 | 24.23 | .000 | .103 | 24.23 | .998 |
| Group*Time | 139.98 | 1 | 139.98 | 11.58 | .001 | .052 | 11.58 | .923 |
| Risk | 296.52 | 1 | 296.52 | 24.54 | .000 | .104 | 24.54 | .999 |
| Error | 2549.56 | 211 | 12.08 | | | | | |

a. Computed using alpha = .05

### c) Understanding Principles of Early Childhood Development

Repeated measures ANCOVA comparing the Home Visit and Play and Learn Groups on this scale, controlling for cumulative risk, reveal that there is a significant main effect of time, and a significant group-by-time interaction. Table 12 presents these results.

**Table 12:**
**Tests of Within-Subjects Contrasts**
**Measure: Understanding of the Principles of Early Child Development**

| | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared | Noncent. Parameter | Observed Power[a] |
|---|---|---|---|---|---|---|---|---|
| Main Effect | 398.06 | 1 | 398.06 | 26.25 | .000 | .111 | 26.25 | .999 |
| Group*Time | 426.03 | 1 | 426.03 | 28.10 | .000 | .118 | 28.10 | 1.000 |
| Risk | 410.20 | 1 | 410.20 | 27.05 | .000 | .114 | 27.05 | .999 |
| Error | 3199.50 | 211 | 15.16 | | | | | |

a. Computed using alpha = .05

## 16. Statistical Results about Exploratory Questions

Recall that the exploratory questions of this evaluation were:

1. Do parents report significantly higher ratings after participation in PAT home visits than they had before participation in:
   - Understanding of the principles of early childhood development?
   - Valuing of reading to their children daily?
   - Knowledge of how to access community resources?

2. Do parents report significantly higher ratings after participation in Play and Learn Groups than they had before participation in:
   - Understanding of the principles of early childhood development?
   - Valuing of reading to their children daily?
   - Knowledge of how to access community resources?

3. Is there a statistically significant improvement from the first visit to the last visit in the quality and quantity of stimulation and support in the home environment for at least 65% of children whose parents participate in the PAT home visits?

4. Do at least 65% of children receiving intensive early childhood mental health services improve on at least one protective factor (initiative, self-control, attachment) or decrease on at least one behavioral concern (withdrawal/depression, emotional control problems, attention, aggression)?

Paired t-tests were used to examine the exploratory questions. Table 13 shows the paired t-test results on the RPT outcomes for both Home Visit and Play and Learn Groups. The pre-post change is statistically significant for each of the three scales, for both groups.

**Table 13:**
**Home Visit and Play and Learn Group**
**RPT Differences: Paired T-test**

| Home Visit | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | BEFORE Mean | AFTER Mean | DIFFERENCE Mean | Std. Dev. | Std. Error Mean | T | df | Sig. (2-tailed) |
| Understanding of Principles of Early Childhood Development | 16.39 | 29.18 | -12.79091 | 7.41199 | .70671 | -18.099 | 109 | .000 |
| Value of Reading to Children Daily | 15.99 | 28.54 | -12.54545 | 7.16853 | .68349 | -18.355 | 109 | .000 |
| Knowledge of Community Resources | 13.99 | 24.08 | -10.09545 | 6.18308 | .58953 | -17.124 | 109 | .000 |

| Play and Learn | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | BEFORE Mean | AFTER Mean | DIFFERENCE Mean | Std. Dev. | Std. Error Mean | T | df | Sig. (2-tailed) |
| Understanding of Principles of Early Childhood Development | 25.41 | 28.16 | -2.75577 | 3.45736 | .33902 | -8.129 | 103 | .000 |
| Value of Reading to Children Daily | 25.02 | 27.26 | -2.23654 | 3.56038 | .34912 | -6.406 | 103 | .000 |
| Knowledge of Community Resources | 19.57 | 22.75 | -3.18269 | 3.84787 | .37731 | -8.435 | 103 | .000 |

Paired t-tests on the HOME were used to assess exploratory question #3. For the Infant Toddler HOME, pre-post matches on 64 participants reveal statistically significant change on each of the six scales: responsivity, acceptance, organization, learning materials, involvement, and variety (see Table 14).

**Table 14:**
**Infant Toddler HOME Results: Paired T-Test**

| Scale (Possible score) | PRE Mean | POST Mean | DIFFER-ENCE in Mean | Std. Deviation | Std. Error Mean | t | Df | p< |
|---|---|---|---|---|---|---|---|---|
| Responsivity (11) | 8.27 | 10.31 | -2.05 | 1.55 | .193 | -10.58 | 63 | .000 |
| Acceptance (8) | 5.50 | 6.53 | -1.03 | .82 | .102 | -10.11 | 63 | .000 |
| Organization (6) | 4.28 | 5.09 | -.81 | .833 | .104 | -7.80 | 63 | .000 |
| Learning Materials (9) | 5.00 | 8.19 | -3.19 | 2.20 | .275 | -11.58 | 63 | .000 |
| Involvement (6) | 3.77 | 5.55 | -1.78 | 1.30 | .163 | -10.94 | 63 | .000 |
| Variety (5) | 2.77 | 4.27 | -1.50 | 1.00 | .126 | -11.91 | 63 | .000 |

For the Early Childhood HOME, pre-post matches reveal statistically significant change at $p \leq .05$ or better for six of the eight scales: learning materials, responsivity, academic stimulation, modeling, variety and language stimulation (See Table 15).

**Table 15:**
**Early Childhood HOME Results: T-Test**

| Scale (Possible score) | PRE Mean | POST Mean | DIFFER-ENCE in Mean | Std. Deviation | Std. Error Mean | t | df | p< |
|---|---|---|---|---|---|---|---|---|
| Learning Materials (11) | 5.58 | 8.18 | -2.60 | 2.11 | .298 | -8.72 | 49 | .000 |
| Language Stimulation (7) | 5.32 | 6.08 | -.76 | 1.22 | .173 | -4.40 | 49 | .000 |
| Physical Environment (7) | 6.68 | 6.80 | -.12 | .44 | .062 | -1.95 | 49 | .057 |
| Responsivity (7) | 5.34 | 6.26 | -.92 | 1.23 | .173 | -5.31 | 49 | .000 |
| Academic Stimulation (5) | 3.16 | 4.38 | -1.22 | 1.28 | .181 | -6.73 | 49 | .000 |
| Modeling (5) | 4.08 | 4.52 | -.44 | .61 | .086 | -5.09 | 49 | .000 |
| Variety (9) | 5.18 | 6.80 | -1.62 | 1.28 | .180 | -8.98 | 49 | .000 |
| Acceptance (4) | 3.70 | 3.80 | -.10 | .61 | .087 | -1.15 | 49 | .255 |

Paired t-test on the standardized DECA scores (T-scores) were used to assess exploratory question #4. Table 16 shows the results. The results reveal that there were statistically significant improvements on all four DECA factors.

**Table 16:**
**DECA Results: Paired T-Test**

| DECA FACTOR | N | Pre-Test Mean | Post-Test Mean | % Who Improved | Pre-Test SD | Post-Test SD | Paired T | p≤ (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| Initiative | 132 | 51.87 | 54.17 | 47% | 11.09 | 12.18 | 2.61 | .010 |
| Self-Control | 132 | 50.31 | 52.56 | 51% | 12.19 | 12.14 | 3.25 | .001 |
| Attachment | 132 | 52.48 | 56.16 | 52% | 11.12 | 12.26 | 4.55 | .000 |
| Behavioral Concerns | 130 | 51.84 | 49.91 | 45%[38] | 10.77 | 11.13 | 3.09 | .002 |

[38] A high score on behavioral concerns indicated higher need; so the decrease in mean scores is an improvement, meaning fewer behavioral concerns.

# Study Logistics

## Protection of Human Subjects

Survey administration followed IRB-approved human subject protection procedures. The IRB approval was through Argus Independent Review Board (website: www.argusirb.com).

In order to protect participant confidentiality and simultaneously distribute the right survey to the right parent, each RPT Play and Learn Group survey was labeled with a unique identification number (without parent name), and was placed inside an envelope with a label that has the matching ID and "Parent/Guardian of (CHILD'S NAME INSERTED)." Only parents eligible to receive the parent survey were included (i.e., they had attended at least four Play and Learn Groups and they consented to participate in the evaluation on the Intake form). This procedure retained the original intent of not giving the evaluator access to identifying information about the parents or their children while simultaneously assured that data were not collected from parents who were not eligible to be surveyed.

Staff read a script (described above) that provided instructions for parents completing the RPT survey. Each copy of the survey was attached to a blank envelope. Staff had a large envelope for collecting the consent forms and completed surveys. The script and written instructions told parents that their answers were confidential, and instructed them to tear off the consent form after signing it and place it in the large envelope that the staff had. Parents were instructed to place the completed survey into the small blank envelope and seal the envelope before giving it to the staff. The sealed envelopes were provided to the data entry company who entered all survey data with 100% blind key verification, and created the program databases.

A parallel script was used by PAT home visit staff to administer the RPT survey to program participants. The same RPT data collection procedures were used for the home visit parents as were described above for the RPT parent surveys. Parents were not asked to complete another RPT parent survey if they remained in the PAT home visit program another year.

## Evaluation and Program Staff Involvement

SPEC Associates remained the third-party evaluator throughout the *Ready Children Ready Communities* grant. As noted above, program staff were involved in the creation of the evaluation instruments and in discussions about evaluation findings as they related to quality improvements. Quarterly meetings were held between the evaluation and program management to troubleshoot any problems that arose and to discuss findings as they became available. In the first years, monthly calls between the evaluators and the program managers assured that data were being collected as specified by the evaluation plan.

## Fidelity and Quality of Implementation

The interventions being implemented in this study were continuously being monitored to assure fidelity and high quality. There were monthly supervisory meetings, expert observations, parent assessments and regular feedback of evaluation findings to both program management and on-the-ground staff.

## Data Quality

This evaluation made use of a third-party data entry company that has a reputation for providing high quality data entry and database development services. Constant feedback to the program management about documentation/recording errors and missing data ensured that the final database to be analyzed for this study was as complete and accurate as possible.

## Appendix B: 2015 Kinder Connect Camps Evaluation Results

## Appendix C: Description of Staff from the Three Agencies

The agency staff implementing these three interventions were ethnically diverse and educationally prepared for this work. For a description of staff for the first years of the program, see the prior evaluation reports.

It the final year of this evaluation, there were a total of 10 frontline staff implementing one or more of the three interventions: Play and Learn Groups (seven staff), PAT home visits (six staff), and social emotional consultation/intervention (three staff). Together they represent four different racial/ethnic identities. The majority identify as Caucasian (5 staff), and the others as African American (two staff), Arabic (two staff), and Hispanic (one staff). Ages of these staff span roughly thirty years and range from 29 to 60 years old. All are female.

Staff started working on this project between 2012 and 2017. A slight majority started in 2012 and 2014 (three staff each year). Two started in 2013; one started in 2015 and one in 2017. All are paid staff. The number of years paid staff worked in early childhood ranged from five to 15. All of the paid staff have relevant education and training. The staff who work in Play and Learn Groups and/or PAT home visits received PAT regional training. The three paid staff who work in social emotional consultation have Masters in either Social Work or Counseling.