

# Parent Possible 2016 Parents as Teachers (PAT) Evaluation

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# Parent Possible

## 2016 Parents as Teachers (PAT) Evaluation

For more information, please contact:

Amy Lopez, PhD

[alopez@omni.org](mailto:alopez@omni.org)

303-839-9422 x133

Julia Bernstein, MPH

[jbernstein@omni.org](mailto:jbernstein@omni.org)

303-839-9422 x137

For General Inquiries/Questions

p. 303-839-9422

f. 303-839-9420

OMNI Institute

899 Logan Street, Suite 600

Denver, CO 80203

[www.omni.org](http://www.omni.org)

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# Executive Summary

Parent Possible (formerly Colorado Parent & Child Foundation) equips parents of young children with the tools and information to be their child's most valuable teacher, trainer and mentor in life. The organization promotes and oversees delivery of three proven parent engagement programs, providing access and support, ensuring efficacy and impact, and advocating and collaborating with early childhood partners across the state. Parent Possible is the state office for Parents as Teachers (PAT), Home Instruction for Parents of Preschool Youngsters (HIPPY) and Vroom, working with program sites across urban and rural communities throughout Colorado to ensure quality program delivery and success.

Each year, Parent Possible conducts an evaluation of the PAT and HIPPY programs. This is done through parent surveys, a child assessment of school readiness, and a child developmental screen. Surveys are analyzed to examine outcomes of parental attitudes and knowledge as well as child development and school readiness after participating in the PAT program.

The methods for gathering the data, the measures used, the analytic approach, and full findings are presented in this report. Key highlights from the results are highlighted below.

## KEY FINDINGS

- The Parents as Teachers program sites were successful in providing services to Colorado's most vulnerable populations. Of those who completed the PAT parent survey, many were low income families, with over 30% of the parent participants earning less than \$16,000 a year. PAT program sites also served minority families, with 66% of the survey participants reporting Hispanic ethnicity.
- Parents are routinely participating in literacy activities, with many parents reporting they are reading with their children almost every day. They are making use of a wide range of literacy items and incorporating literacy into day to day activities.
- Parents found their parent educators to be overall very helpful (mean score of 4.81 out of 5). Parents report their parent educator was responsive and respectful in working with them, with over 90% of the parents rating their educator with 5 out of 5 points.
- Overall, children who completed the BSRA-3 School Readiness Assessment had a statistically significant increase in their school readiness skills, with an increase in percentile rank of 36 to a percentile rank of 43. In addition, children had a statistically significant increase in their average percent mastery in each of the domain areas.
- There was a statistically significant difference in School Readiness Proficiency levels between pre-test and post-test ( $X^2=9.5$ ,  $p<.001$ ), with fewer children scoring in the very delayed and delayed categories and more children scoring in the advanced and very advanced categories at post-test.

# Introduction

## PARENT POSSIBLE

Parent Possible (formerly Colorado Parent & Child Foundation) equips parents of young children with the tools and information to be their child's most valuable teacher, trainer and mentor in life. The organization promotes and oversees delivery of proven parent engagement programs Parents as Teachers, Home Instruction for Parents of Preschool Youngsters and Vroom. Parent Possible provides access and support, ensures efficacy and impact, and advocates and collaborates with early childhood partners across the state.

## PARENTS AS TEACHERS (PAT)

The PAT program is an evidence-based early childhood program that includes home visits, group meetings, health and developmental screenings, and development of resource networks. Parent educators utilize the PAT curriculum to promote positive parent-child interaction from pregnancy through Kindergarten. The PAT curriculum is designed to increase parent knowledge of childhood development, improve parenting practices, provide early detection of developmental delays and health issues, prevent child abuse and neglect, and increase children's school readiness and school success.

Research of the PAT program has shown positive impacts for parents and their children. Parents involved in the program were more likely to promote reading in the home (Albritton, Klotz, & Roberson, 2004; Pfannenstiel, Seitz, & Zigler, 2002; Zigler, Pfannenstiel, & Seitz, 2008). In addition, parents demonstrated significant improvements in parent knowledge, parenting behavior and parenting attitudes (Owen & Mulvihill, 1994; Pfannenstiel & Selzer, 1985, 1989; Wagner, Spiker, & Linn, 2002).

# Methods

## MEASURES

At each of the program sites, parents were asked to complete a parent/caregiver survey that consists of several items intended to assess knowledge and behavior on a number of parenting practices including infant/child development, healthy behaviors, and literacy activities.

## PAT Parent Survey

The PAT parent survey is administered annually. Caregivers complete the retrospective survey in the spring of each year based upon the youngest child in the family if there are multiple children involved. It

is completed on paper and submitted to the parent educators or completed online in the spring of each year. The survey has four sections: questions about parental behaviors; questions about parental knowledge; questions specific to literacy/reading activities; and questions about the quality and skills of the parent educator.

To assess parental behaviors and literacy activities, parents were asked a series of questions rated on a 1-5 scale, where higher scores indicate a higher frequency in that behavior or activity. Items were combined into the following scales: parental confidence, parental knowledge of healthy behaviors, literacy activities, and reading activities. Reliability analyses were conducted and alpha coefficients were greater than .80 for each of the scales. Both item and scale means are reported.

Parental knowledge was measured using a series of true/false questions about parenting practices. The percentage of how many parents answered the question correctly is reported.

Finally, the parents were asked a series of questions about the quality of their parent educator. Reliability analyses were conducted on these items, but the alpha coefficient was .67, which falls below the acceptable range. Because it did not meet criteria to combine the items into a complete scale, no full scale mean is reported, only item means are provided.

## Bracken School Readiness Assessment (BSRA-3)

The BSRA-3 is a validated scale used to assess a child's readiness for school by evaluating a child's understanding of colors, letters, numbers/counting, sizes/comparison, and shapes (Bracken, 2007). The assessment is appropriate for children aged three through six years, and is individually administered by asking children to point to pictures in response to examiner questions. The BSRA-3 is available in English and Spanish, both of which are used by Parent Possible to evaluate program participants.

Prior to administration, all Parent Educators were required to attend an all-day training to become familiar with the administration and scoring of the tool. Due to the timing of the training, initial pre-assessments were administered on all enrolled children over age 3 between December 1, 2015 and January 31, 2016. Post-assessments for these children were administered in the Spring between March 1 and April 31, 2016 with no less than 3 months between pre and post. Initial pre-assessments for children newly enrolled or those not yet 3 during the first pre-assessment period were assessed within 60 days of their enrollment or within 60 days of their 3rd birthday. Initial post-assessments were administered no less than 3 months following pre-assessments and occurred in the Spring between, March 1 and April 30 (or will occur in the Fall between September 1 and October 31).

To measure school readiness, items are grouped together into domain areas, which include: colors, letters, numbers/counting, size/comparisons, and shapes. The percent mastery, or percentage of items correct, is used to compute a total school readiness raw score and percentile rank. The BSRA-3 School Readiness Scores are reported using a percentile rank score. Once the raw score is calculated, it is adjusted for chronological age. The percentile rank score indicates how a child scores relative to other same age peers. For example, a percentile rank of 50 indicates that a child's score was equal to or greater than 50% of the

other same age children. Higher percentile ranks indicate that child performs better than other same age children with lower percentile rank scores. To account for the variation in ages among the children involved in the PAT programs and provide a consistent metric, percentile rank scores are reported and used in analysis. In addition to the percentile rank scores, the proficiency levels based on chronological age and expected school readiness of the children are reported to indicate whether the children are delayed, average, or advanced. Finally, the domain sub scores are presented as percent mastery by indicating the percentage of correct answers. The sub domain areas are not adjusted for age, thus do not necessarily account for typical maturation in the same way the percentile rank and proficiency levels do.

The BSRA-3 is offered in both Spanish and English. Reliability analyses were conducted with all the assessments together, resulting in an alpha of .81. However, to ensure that there were no differences in scale variance by language, reliability analyses were also conducted on the scales isolated by Spanish/English. The English alpha was .8 and the Spanish alpha was .81. Because there were no differences in the scale reliabilities by language, the measure was analyzed as a whole, with both languages included.

## Ages and Stages Questionnaires (ASQ-3)

The ASQ-3 is a validated developmental screening tool for children aged one month to five years (Squires & Bricker, 2009). Adhering to PAT fidelity requirements, all children are screened within 90 days of enrollment and annually thereafter. Additional screening may occur if results warrant a follow-up or the parent expresses concern.

The ASQ-3 screens for children's developmental skills in communication, gross motor, fine motor, problem solving, and personal-social areas (Squires & Bricker, 2009). The survey is completed by parents who respond to questions about their children's abilities and activities and then scored by a trained professional. These raw scores are compared to cutoff points to determine if further assessment or monitoring of the child's development is needed (Squires & Bricker, 2009). The ASQ-3 raw scores are categorized into refer for treatment or not, based on whether the child is in need of further screening. The percentages of those who were screened, the results, and the number of subsequent referrals are reported.

## Ages and Stages Questionnaires: Social-Emotional, Second Edition (ASQ:SE-2)

The ASQ:SE-2 is a validated screening tool focused on social and emotional behavior that is used in conjunction with the ASQ-3. It screens the areas of self-regulation, compliance, social-communication, adaptive functioning, autonomy, affect, and interaction with people. The ASQ:SE-2 is administered in English and Spanish to participating children at the same intervals as the ASQ-3. The percentages of those screened are reported.



## DATA COLLECTION

Parents completed the PAT surveys on paper and then returned them to their parent educator in a sealed envelope. Parents were offered the opportunity to complete the survey in Spanish or English. All surveys were identified using only a unique ID number to ensure confidentiality. Each of the sites collected all the paper surveys and provided the surveys to Parent Possible for data entry. A few of the parents completed the survey online. These online files and the data entered from the paper surveys were provided electronically to OMNI for cleaning and analysis.

## STATISTICAL ANALYSIS

For the PAT parent surveys, scales were calculated and the means are reported. In addition, the means of each of the individual items are also reported. To determine differences by demographic variables, independent sample t-tests, chi-square analyses, and Analysis of Variance (ANOVA) tests were used.

For the BSRA-3 School Readiness Assessment, the percentile rank scores for pre- and post-tests are reported. Changes in percentile ranks were analyzed using non-parametric tests (Mann Whitney and Wilcoxon matched pairs) to account for the rank distribution. The raw scores and domain mastery levels were analyzed using matched samples t-tests. Changes in proficiency levels were analyzed using chi-square analyses. To determine differences by demographic variables, independent sample t-tests, chi-square analyses, and Analysis of Variance (ANOVA) tests were used.

# Findings

## PAT PARENT SURVEY

In total, 959 families across 25 program sites participating in the PAT program completed the survey. On average, families consisted of 2.0 (sd=.76) adults and 2.3 (sd=1.7) children.

**Table 1-Survey Responses by Program Site**

<b>Program Site</b>	<b># of Surveys</b>	<b>Percent of total Analysis</b>
Arapahoe County Early Childhood Council	23	2.5%
Boulder County Housing & Human Services	28	3%
Bright Futures for Early Childhood and Families	28	3%
Catholic Charities Diocese of Pueblo	156	16%
Delta Family Center	20	2%
Divide Community Partnership Family Resource Center	15	2%
El Paso County Adult and Family Education	27	3%
Estes Valley Investment in Childhood Success	12	1.5%
Family Connects	16	2%
Family Development Center-Newborn Network	15	2%
Family Star Montessori	40	4%
Family & Intercultural Resource Center	106	11%
Focus Points Family Resource Center	61	6%
Growing Home	136	14%
Hilltop Community Resources	18	2%
La Familia – The Family Center	51	5%
La Llave Family Resource	14	1.5%
La Plata Family Centers Coalition	16	2%
Metropolitan State University of Denver	18	2%
Morgan County Family Center	10	1%
Mountain Resource Center	12	1.5%
Piñon Project	11	1%
Rocky Mountain PAT (a program of Families First)	40	4%
Starpoint First Steps	54	6%
Tri County Family Care Center	30	3%

## FAMILY CHARACTERISTICS

### PARENT AGE

The ages of the parents varied, with most parents between ages 25-34 (50%).

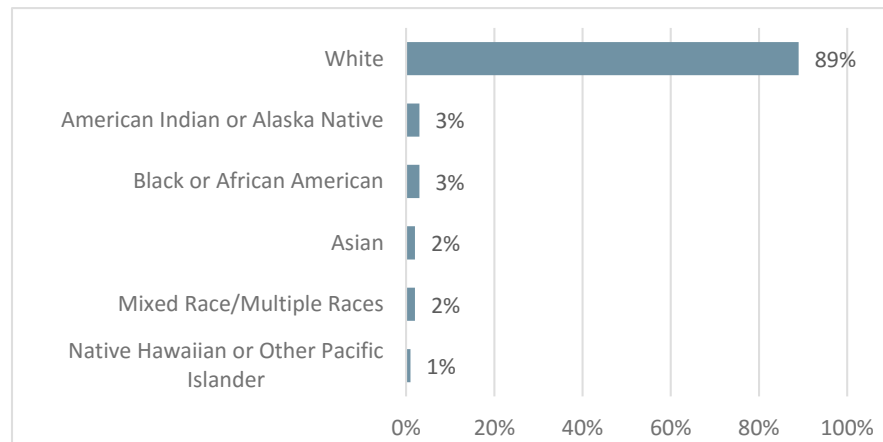
**Table 2. Parent Age**

AGE	PERCENT
UNDER 18	2%
18-24 YEARS OLD	15%
25-34 YEARS OLD	50%
35-44 YEARS OLD	29%
45 YEARS OR OLDER	4%

### RACE & ETHNICITY

Overall, parents' race was predominately White (89%). Sixty-six percent report being of Hispanic or Latino Ethnicity.

**Figure 1. Parent Race**



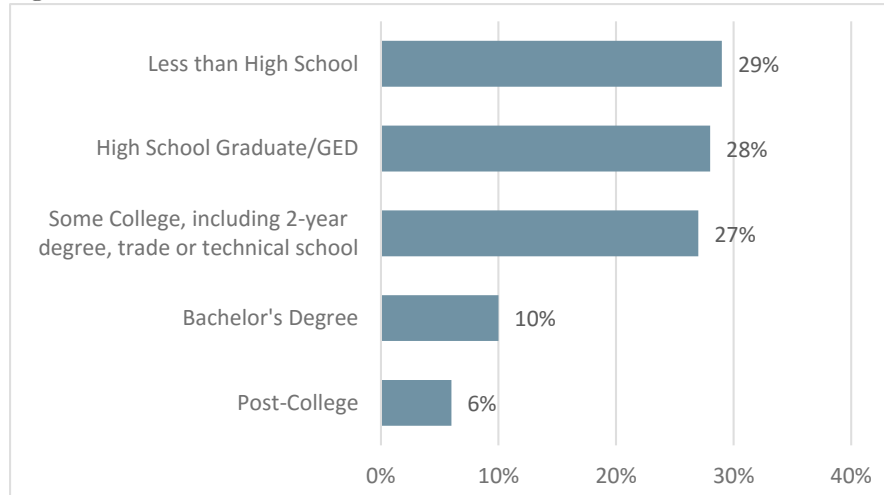
**Table 3. Parent Ethnicity**

ETHNICITY	PERCENT
HISPANIC OR LATINO	66%
NON-HISPANIC OR LATINO	34%

## PARENT EDUCATION LEVEL

The largest percentage of parents did not complete high school (29%). The next highest percentage was with parents who had a high school diploma or GED (28%). There were also parents who had completed some college (27%) or who completed a college degree or higher (16%).

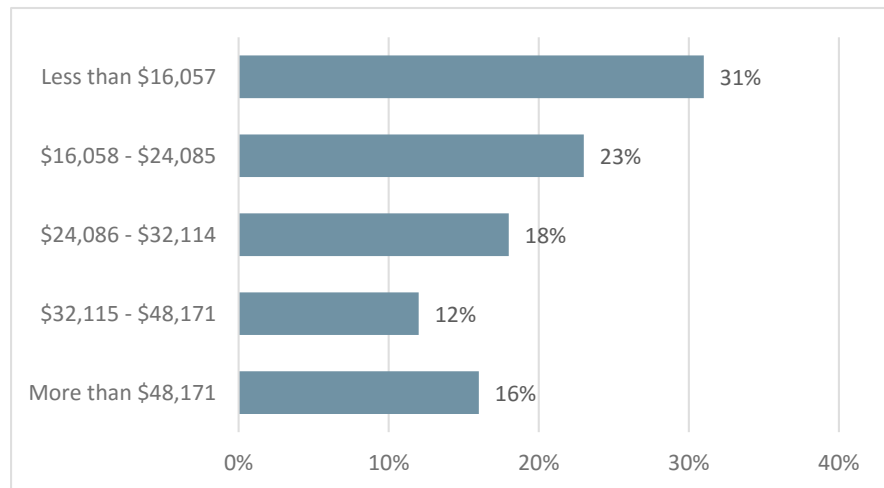
Figure 2. Parent Education Level



## HOUSEHOLD INCOME

Overall, the largest percentage of the parents make less than \$16,000 annually (31%). The next largest percentage was those who make less than \$24,000 annually (23%).

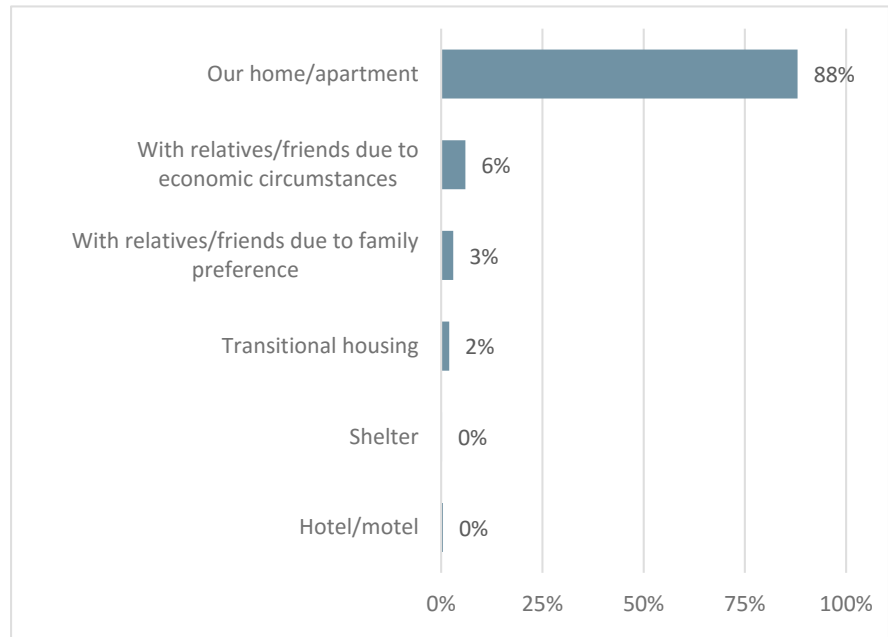
Figure 3. Household Income



## FAMILY LIVING CIRCUMSTANCES

The vast majority (88%) of PAT families lived in their own home or apartment. The next most common living arrangement was staying with relatives or friends due to economic reasons (6%) or due to family preference (3%). There were a few families (5) who reported living in a hotel/motel or in a shelter (less than 1%).

Figure 4. Family Living Circumstances



## PARENT PRACTICES

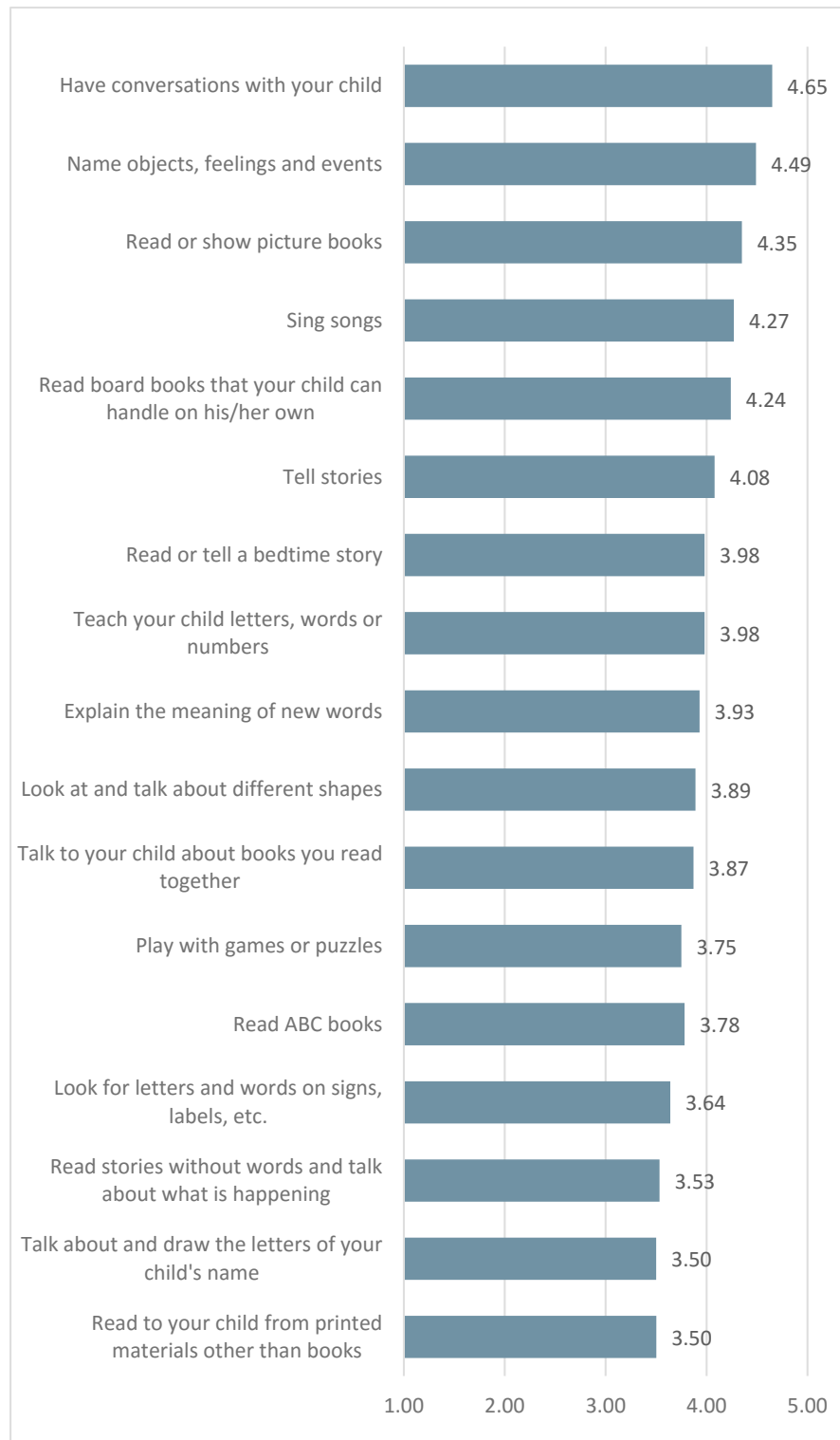
### LITERACY ACTIVITIES

Parents were asked to indicate how frequently they do each of these literacy activities with their child on a scale of 1-5, where 1 = never and 5 = every day. These items were combined into a literacy activities scale ranging from 17-85. The parents report a mean literacy activities score of 68.2 (sd=12.6).

Parents reported “have conversations with your child” as the literacy activity they do most frequently (mean=4.7) and reading to their child from materials other than books as the least frequent activity (mean=3.5).

Parents were asked whether they believed their children were too young for these activities. In general, most parents (86%) did not believe children were too young to participate in literacy activities.

Figure 5. Frequency of Literacy Activities



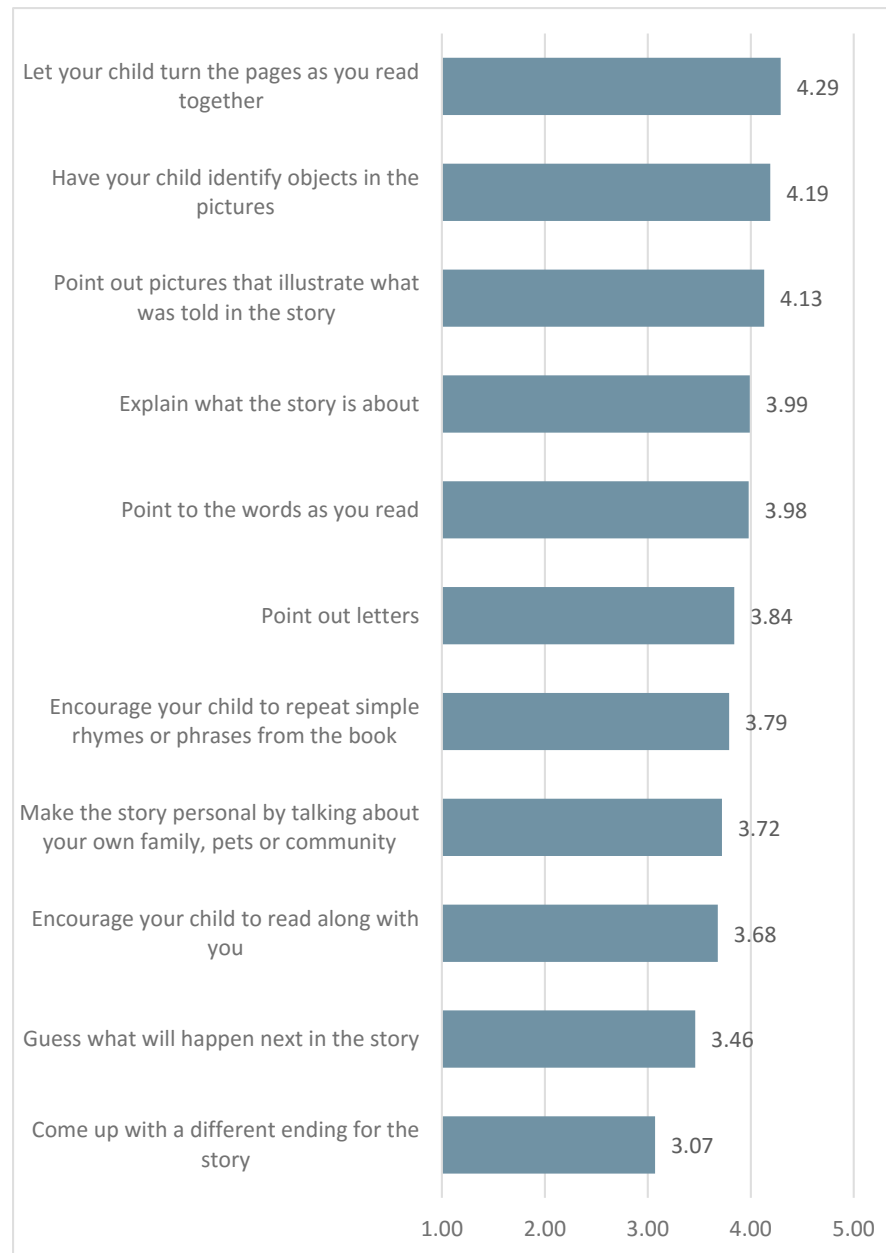
## READING ACTIVITIES

Parents were asked to indicate how frequently they do each of these reading activities with their child on a scale of 1-5, where 1 = never and 5 = always. These items were combined into a reading activities score with a possible range of 11-55. The parents report a mean reading activities score of 42.5 (sd=9.7).

Parents report they let their child turn the pages as they read as the most common reading activity (mean=4.3) and “come up with a different ending for the story” as the activity they do least often (mean=3.1).

Parents were asked whether they believed that their children were too young for any of these activities. Overall, most parents (83%) reported that their children were not too young for these reading activities.

Figure 6. Frequency of Reading Activities



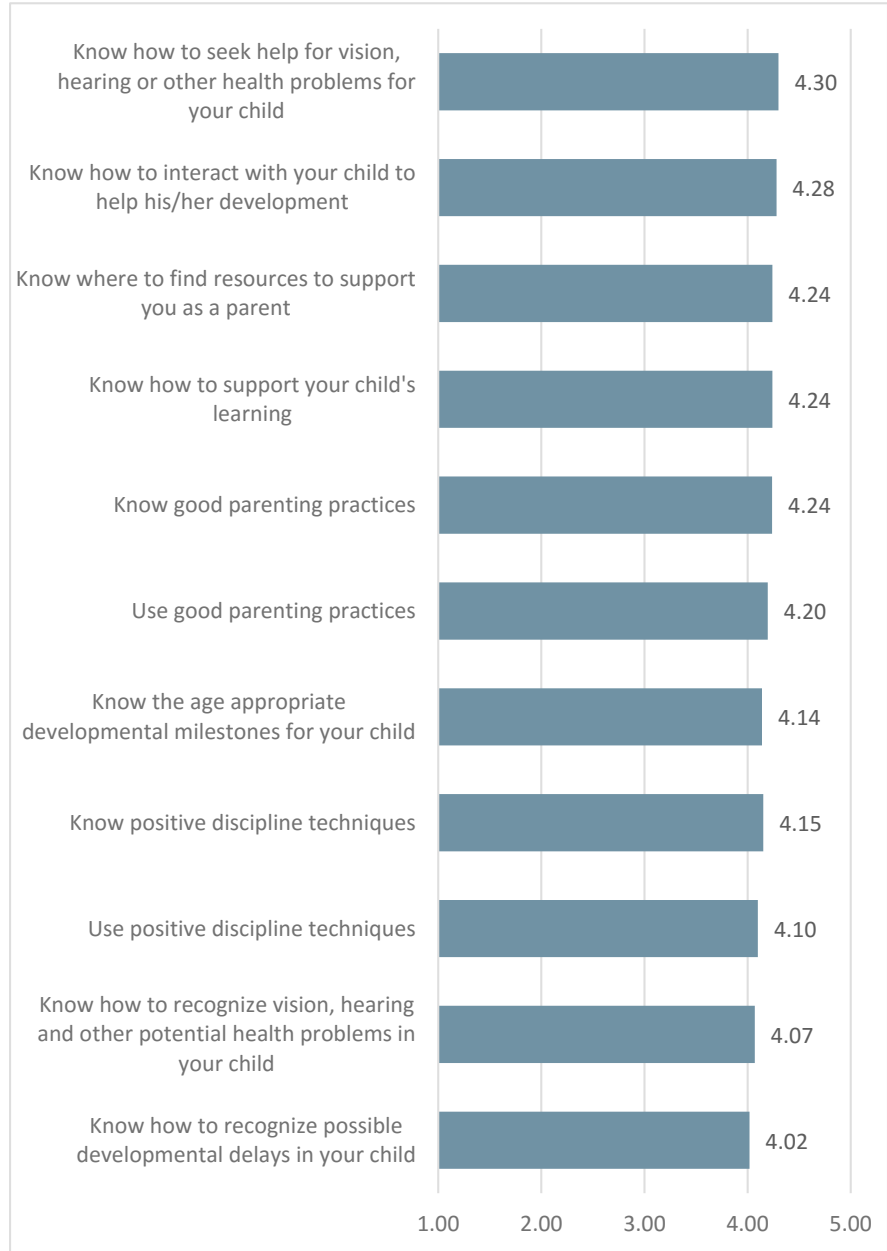
# PARENT ATTITUDES AND KNOWLEDGE

## CONFIDENCE IN PARENTING

Parents were asked to rate how confident they feel in a variety of areas on a scale of 1-5, where 1= no confidence and 5 = very confident. These items were combined to create a parent confidence scale with a possible range of 11-55. Overall, the mean score was 46.1 (sd=6.3).

Parents felt most confident in knowing how to find help for health problems (mean=4.3) and knowing how to support a child's development (mean=4.3). However, parents report that while they would know where to get help for these problems, they feel less confident in being able to recognize a health or developmental problem on their own.

Figure 7. Mean Confidence in Parenting



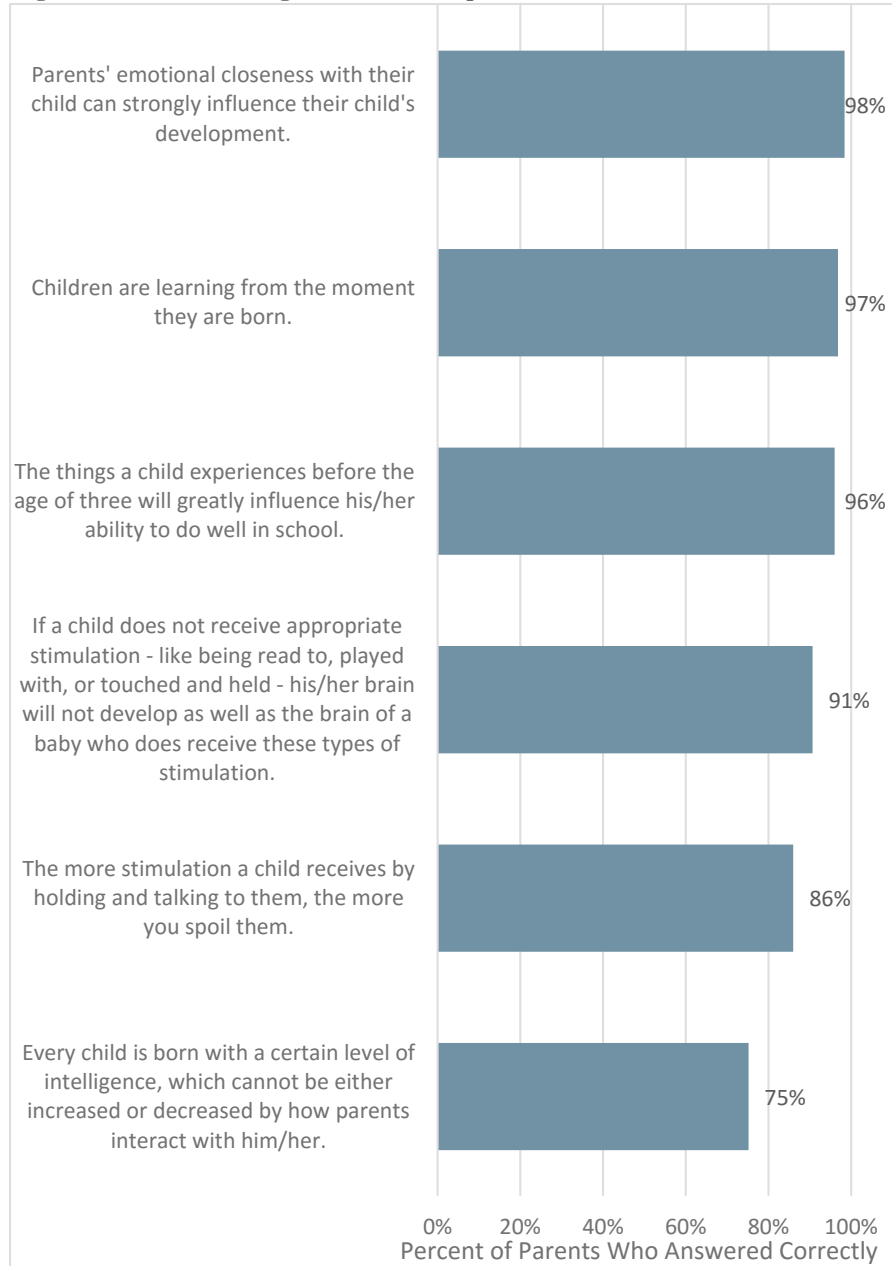


## INFANT AND CHILD DEVELOPMENT KNOWLEDGE

Parents were asked a series of true/false questions about the role of parenting on education and learning. Figure 8 reports how many parents correctly answered each question.

Overall, most parents knew that children begin learning from the moment they are born (97% answered correctly) and that parents' emotional closeness can influence development. However, fewer knew that a child's level of intelligence could be increased or decreased depending on the kind of interaction the child has with the parent (75% answered correctly).

**Figure 8. Parent Knowledge of Child Development**

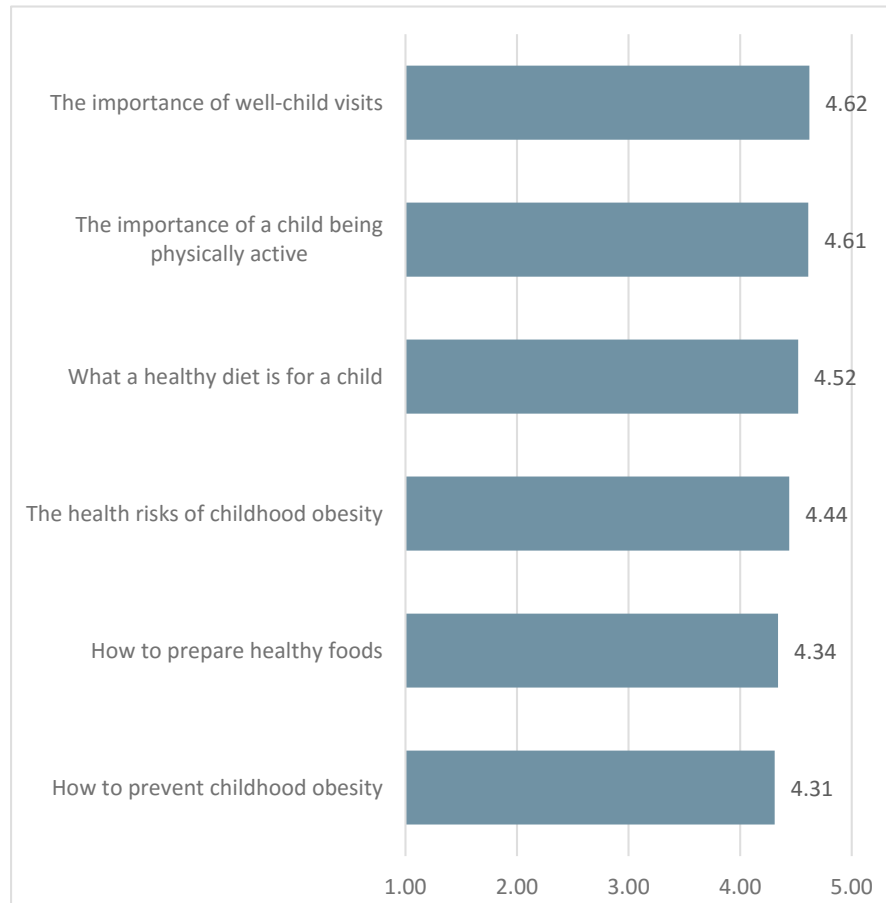


## KNOWLEDGE OF HEALTHY BEHAVIORS

Parents were asked to indicate how well they knew the importance of each of these healthy behavior items on a scale of 1-5, where 1 = no knowledge and 5 = very confident in their knowledge of this area. These items were combined into a healthy behaviors scale ranging from 6-30. The parents report a mean score of 26.8 (sd=3.3).

Parents reported knowing the most about the importance of well-child visits (mean=4.6), and knowing the least about how to prevent childhood obesity (mean=4.3).

Figure 9. Mean Knowledge Level of Healthy Parenting Practices



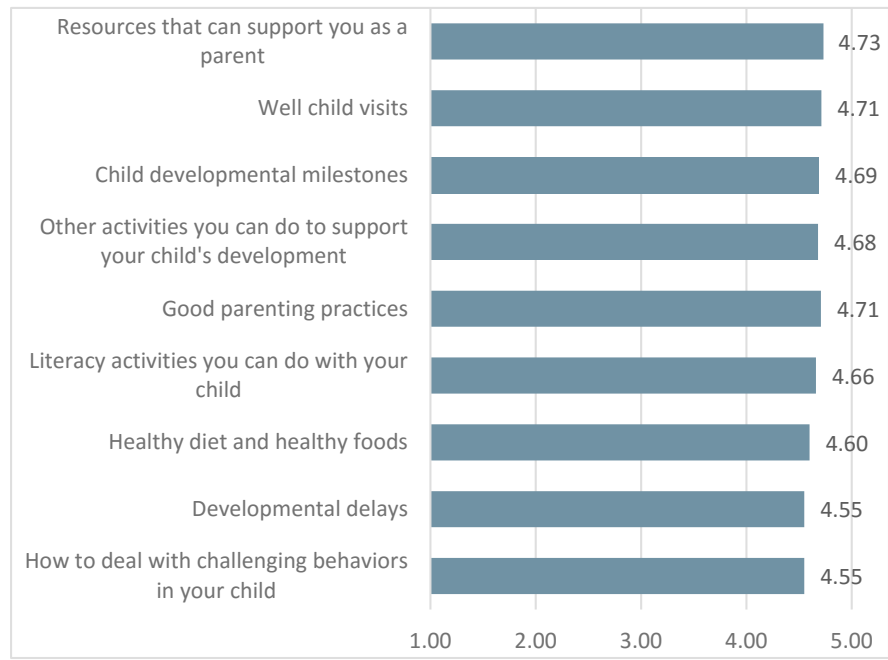
# PARENT EDUCATOR RATINGS

## PARENT EDUCATOR KNOWLEDGE

Parents were asked a series of items about their parent educator. Parents were asked to rate each item on a scale of 1-5, where 1 indicates the parent educator has no knowledge and 5 indicates the educator is very knowledgeable.

Parents report that their parent educators were most knowledgeable about how to access resources to support parenting (mean=4.7). Parents report that parent educators were least knowledgeable about how to deal with challenging child behaviors (mean=4.5).

Figure 10. Mean Parent Educator Knowledge

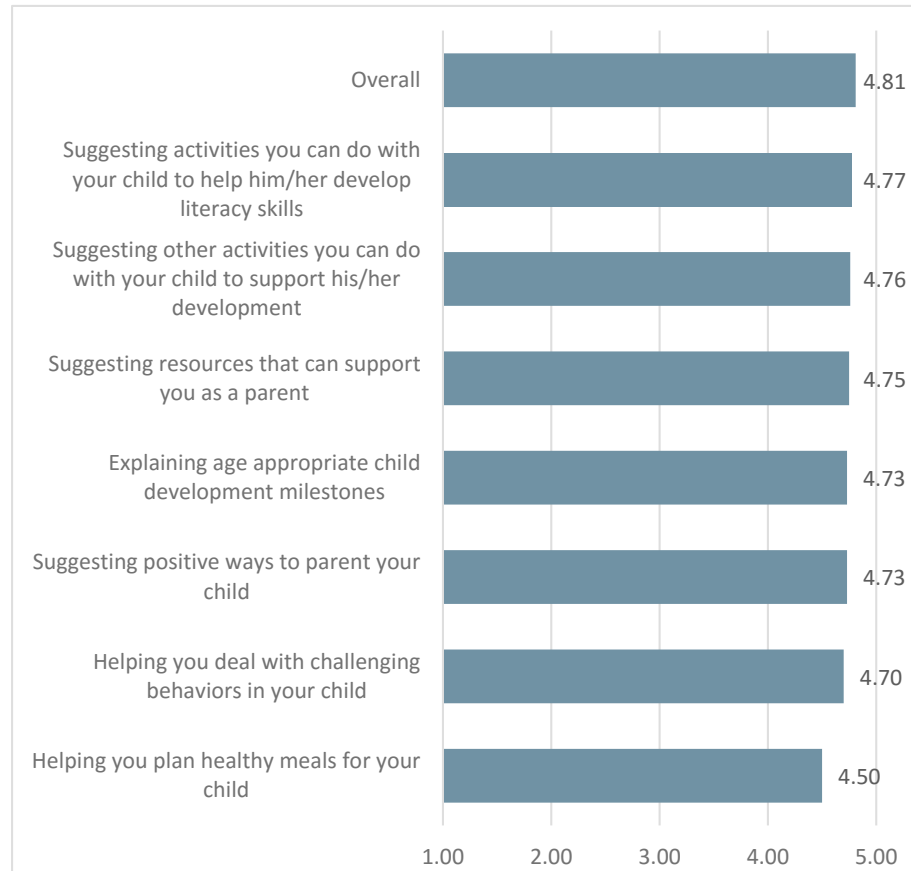


## QUALITY OF PARENT EDUCATOR WORK

Parents were also asked how well their parent educators supported them in helping their child. They were asked to rate the educators on a scale of 1-5, where 1 = not helpful and 5 = very helpful.

Overall, parents felt that their educator was very helpful (mean= 4.81) and provided the most information around suggesting activities to support building child literacy skills (mean=4.77).

Figure 11. Mean Level of Quality of Parent Educator Work



## PARENT EDUCATOR RESPONSIVENESS AND RESPECTFULNESS

Parents were asked to rate their parent educator responsiveness to questions about parenting on a scale of 1-5 in which 1 = not responsive at all and 5 = very responsive. The mean score for parent educator responsiveness was 4.88 (sd=.39). About 90% of the parents rated their parent educator with the highest rating of very responsive. Of the 955 families, only 10 parents rated the educator as a 3 or lower.

Parents were also asked to rate their parent educator on respectfulness to parent culture and beliefs about parenting on a 1-5 scale in which 1 = not respectful at all and 5 = very respectful. The mean score for parent educator respectfulness was 4.93 (sd=.32). About 94% of the parents rated their parent educator with the highest rating of very respectful. Out of the 955 families, only 5 parents rated the educator with a 3 or lower.

## PARENT SURVEY DIFFERENCES BY DEMOGRAPHICS

The data was analyzed using Analysis of Variance (ANOVA) tests to determine if there were any differences in knowledge of healthy behaviors, in parent confidence, in the frequency of literacy activities, or in the different types of reading activities used by different demographics.

**By Age:** There were no statistically significant differences on parental knowledge of healthy behaviors, on the literacy activities scale or on the reading activities scale by age. However, there were differences on the parent confidence scale by age ( $F(4,865)=2.4, p<.05$ ), with those under age 18 reporting less confidence about their parenting practices (mean =42.0) than all other age groups.

**By Education Level:** There were no statistically significant differences on parental knowledge of healthy behaviors, parent confidence or reading activities by level of education. However, there were statistically significant differences in the frequency of literacy activities by education ( $F(4,805)=13.4, p<.001$ ), with those who did not complete high school and those with a High School diploma reporting less frequency of literacy activities than those with some college or higher.

**By Living Situation:** There were no statistically significant differences on parent knowledge of healthy behaviors, parent confidence, or the frequency of literacy activities by living situation. However, there was a difference by living situation on reading activities ( $F(5,834)=2.4, p<.05$ ) with those living in their own home/apartment, living with relatives, or living in transitional housing reporting a wider range of use of materials than those living in a motel/hotel or shelter.

Table 4. Parent Confidence by Age

AGE	MEAN PARENT CONFIDENCE SCORE
UNDER 18	42.0 (SD=6.5)
18-24	46.9 (SD=6.0)
25-34	46.1 (SD=6.4)
35-44	45.6 (SD=6.1)
45 OR OLDER	46.6 (SD=6.4)

Table 5. Literacy Activity Score by Education

EDUCATION	MEAN LITERACY ACTIVITY SCORE
LESS THAN HIGH SCHOOL	64.5 (SD=13.3)
HIGH SCHOOL DIPLOMA/GED	66.3 (SD=13.2)
SOME COLLEGE	70.2 (SD=11.2)
BACHELOR'S DEGREE	71.8 (SD=9.1)
POST-COLLEGE	74.9 (SD=7.8)

Table 6. Reading Activity Score by Living Situation

LIVING SITUATION	MEAN READING ACTIVITY SCORE
OWN HOME/APARTMENT	42.4 (SD=9.6)
WITH RELATIVES	42.3 (SD=9.7)
TRANSITIONAL HOUSING	44.7 (SD=7.5)
HOTEL/MOTEL	24.6 (SD=9.5)
SHELTER	35.1 (SD=11.7)

# ASQ DEVELOPMENTAL SCREEN

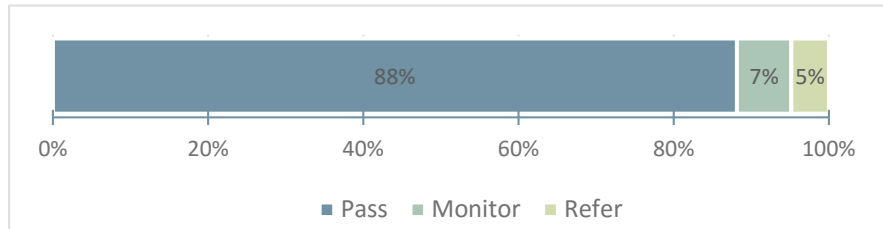
## ASQ ADMINISTRATION

The ASQ and ASQ-SE Developmental Screen are conducted to assess children’s development. All of the sites completed the administration of the ASQ developmental screen. However, only those sites who receive MIECHV funding are reported here. From those sites, 938 of the 955 eligible children (98%) were screened.

## ASQ RESULTS

Of children who were screened, 89% met criteria for “pass,” indicating normal development. Seven percent of children met criteria for monitoring and 5% met criteria for referral. Of those children who needed referrals, 97% received a referral to services.

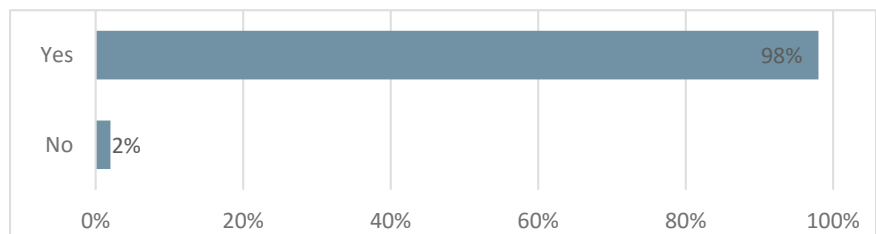
Figure 12. ASQ Results



## ADMINISTRATION OF ASQ-SE

All of the eligible children (98%) were screened using the ASQ-SE. No further results from the ASQ-SE were provided.

Figure 13. Administration of ASQ-SE



# BRACKEN SCHOOL READINESS

This report is based on 501 total children who were involved in the PAT program and completed the Bracken School Readiness Assessment. The BSRA was administered in both Spanish and English, with 304 (61%) completing the assessment in English and 194 (31%) completing the assessment in Spanish. There were 271 children who completed the assessment at both pre-test and post-test, for a 54% match rate. To determine growth over time, results of the matched samples are reported here.

## Child Characteristics

At pre-test, the children ranged in age from 3 years, to 6 years, with a mean age of 48.3 (sd=9.4) months.

There were more boys than girls, with 54% male and 46% female.

By race, the largest number of children were White (76%). The other races account for less than 10% of children. About half report being Hispanic or Latino Ethnicity (48%).

There were 8 different languages spoken in the home, with 54% of the families reporting English as the primary language 43% reporting Spanish and less than 1% of each of the other reported languages.

Most of the children lived with their parents, with 94% living with their biological mothers, 76% living with their biological fathers and 3% living with other relatives. Fewer than 1% were in foster care, transitional housing, or homeless.

Figure 15. Child Gender

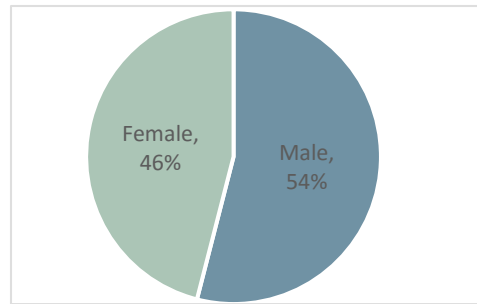


Figure 14. Child Race

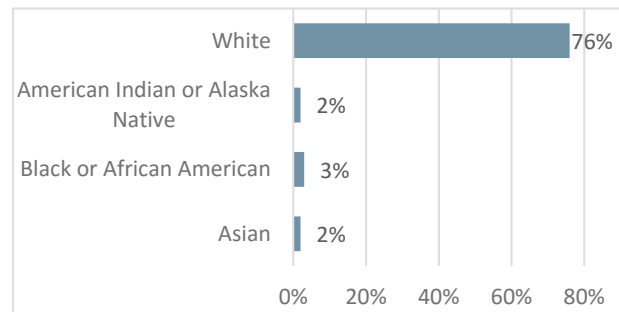


Figure 16. Child Language Spoken

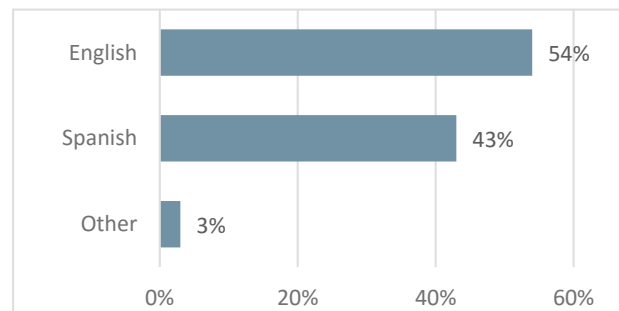
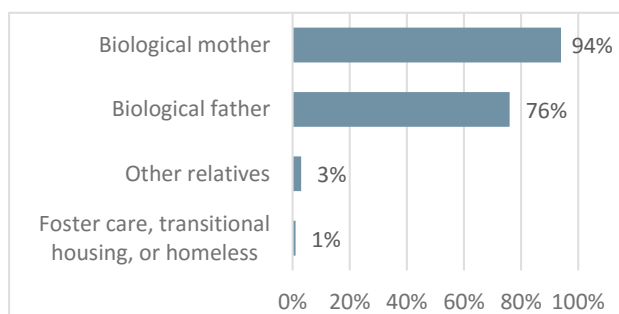


Figure 17. Child Living Situation

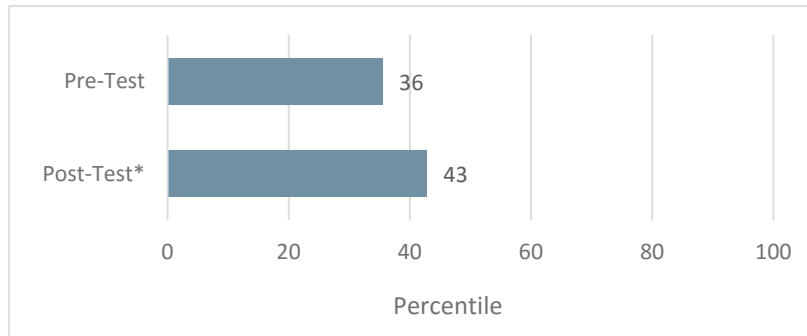


## Findings from the BSRA-3 Assessment

### Percentile Rank

The percentile rank demonstrates school readiness skills compared to other children of the same age. This ranking allows for calculation of change over time while accounting for normal developmental growth. Scores range from 0-100, with 50<sup>th</sup> percentile as an average.

Figure 18. School Readiness Percentile Rank

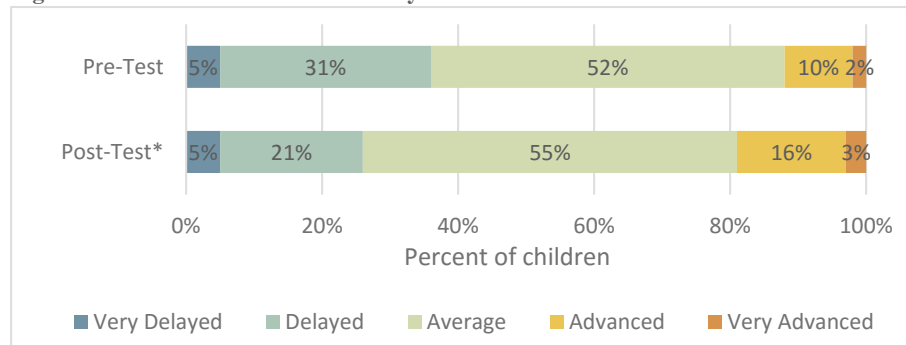


The children in the PAT programs increased their school readiness scores from a percentile rank of 35.6 at pre-test to a percentile rank of 42.9 at post-test. This was a statistically significant difference ( $p < .01$ ) between pre-test and post-test.

### Proficiency Levels

Proficiency levels are calculated based upon the raw scores and then adjusted for age to determine whether children are delayed in their school readiness, average, or advanced.

Figure 19. School Readiness Proficiency Levels



There was a statistically significant difference in proficiency levels between pre-test and post-test ( $X^2=9.5$ ,  $p < .05$ ), with fewer children scoring in the very delayed and delayed categories and more children scoring in the average, and advanced categories at post-test.

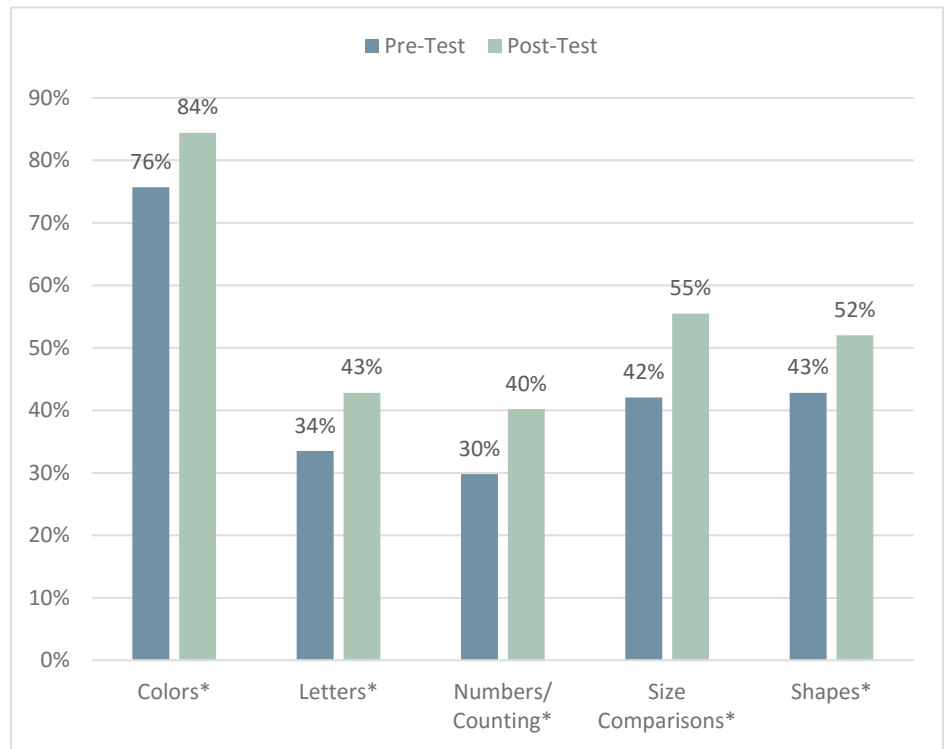


*Percent Mastery on Subdomain Areas*

In addition to an overall score, the children were assessed in each of the individual domain categories of colors, letters, numbers, sizes, and shapes.

Children had a statistically significant increase in their average percent mastery in each of the domain areas, with an increase of 8% for colors ( $t=6.1, p<.001$ ), 9% for letters ( $t=7.3, p<.001$ ), 10% for numbers/ counting ( $t=8.7, p<.001$ ), 13% for sizes ( $t=10.4, p<.001$ ) and 11% for shapes ( $t=7.1, p<.001$ ).

**Figure 20. Percent Mastery on Subdomain Categories**



# BRACKEN SCHOOL READINESS ASSESSMENT BY DEMOGRAPHICS

## Language

There were statistically significant differences based on the language in which the BSRA was administered. Those children who took the BSRA-3 in Spanish scored significantly lower than those who took the assessment in English at both pre-test and post-test. Those who took the Spanish BSRA had greater gains in percentile rank (9 points) than those who took it in English (6 points), but this was not a statistically significant difference.

By proficiency level, the Spanish speaking children were more likely to be delayed at both pre-test ( $X^2=56.2$ ,  $p<.001$ ) and post-test ( $X^2=31.4$ ,  $p<.001$ ) than those who took the assessment in English. However, there were greater gains among those who took the assessment in Spanish in moving from the delayed range and into the average range, with a 10% increase to average among Spanish speakers between pre-test and post-test.

Figure 22. Percentile Rank by Language

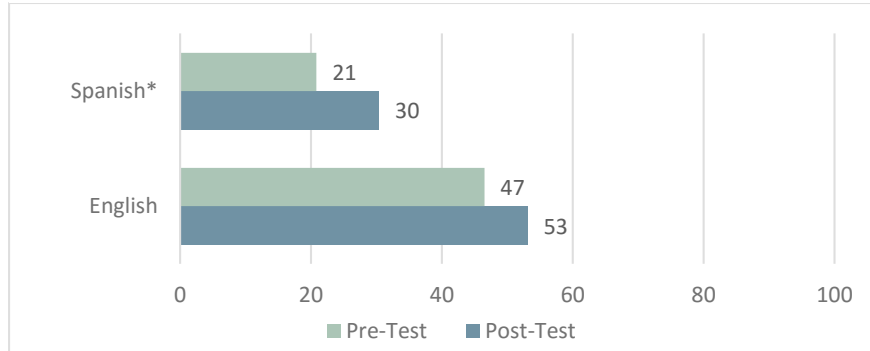


Figure 21. Proficiency Levels - English

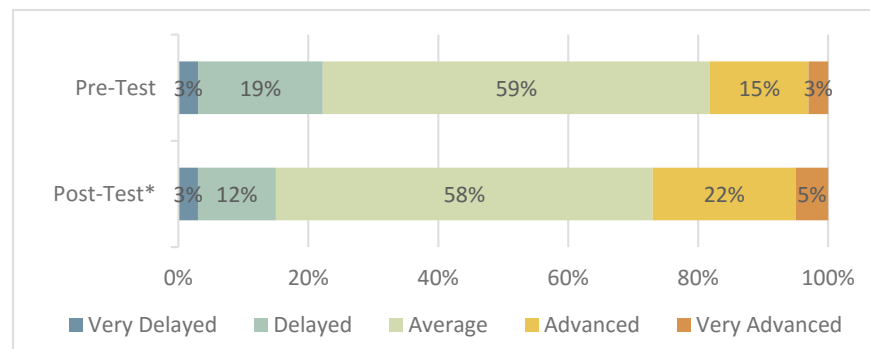
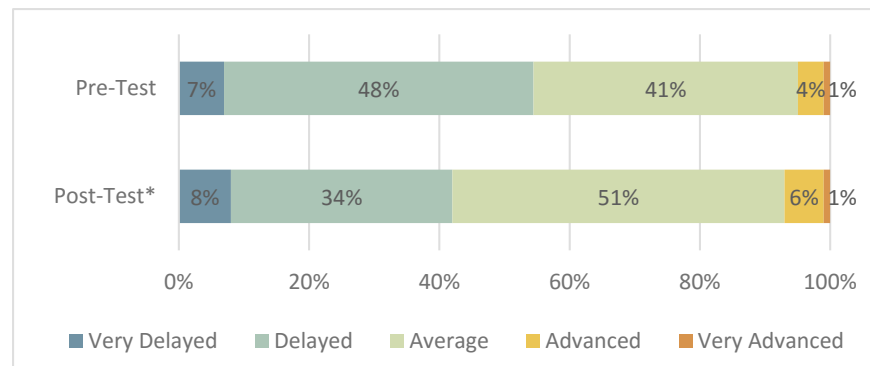
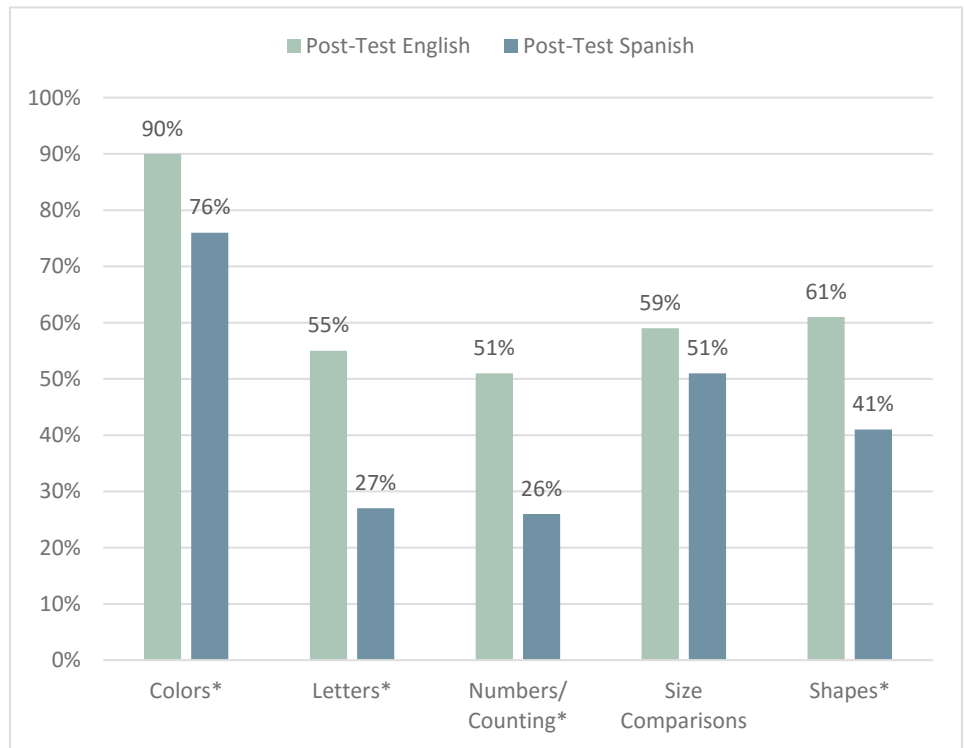


Figure 23. Proficiency Levels - Spanish



There were also statistically significant differences by language on all subdomain categories, with those who took the assessment in Spanish scoring lower in all areas on both pre-test and post-test than those who took the assessment in English. The largest differences were in letters and numbers, with Spanish speakers knowing less than 27% of their letters and 26% of their numbers at post-test compared to English speakers who knew 55% of their letters and 51% of their numbers.

Figure 24. Subdomain Scores at Post-Test by language



While these findings may indicate that children who

speak Spanish might benefit from additional support to develop school readiness skills, these findings may also be related to differences in the BSRA-3 itself. The Spanish version is validated and demonstrated to be no different from the English version. Both versions measure the same constructs across language (Bracken, et. al., 1990). However, the norms for calculating percentile ranks for Spanish speaking children have not been developed in the same manner as the English version. Specifically, the percentile rank may differ if Spanish norms are calculated using only Spanish speaking students rather than comparing them to all same age youth (McEnturff, Jacobson, Mowell, & Ojo, 2005). In this study, the percentile ranks were calculated using an English speaking population. Any differences found in the sub-domain areas are likely true differences as both versions of the test measure the same concepts. However, differences in percentile rank could be influenced by other factors based on how the tests are normed to the population, so these findings should be interpreted with some caution.

#### *Other Demographics*

The BSRA-3 Assessment was also analyzed by gender. There were no statistically significant differences between males and females on percentile rank, proficiency levels, or on the domain areas.

The sample sizes within the individual categories were too small to analyze any differences by race or living situation.

# Summary and Conclusions

## *Parental Outcomes*

Results from the 2015-2016 evaluation indicate positive findings overall in the PAT program sites. The PAT parental survey indicates that parents are regularly using literacy activities, typically several times each week. The overall mean reading activities score was 42.5 (sd=9.7) out of a possible 55 points, indicating that parents are using these activities every day or every other day. In addition, the parents are using a wide range of literacy activities including reading, telling stories, singing songs, and providing materials for their child to read, write, and draw. The mean overall score on the activities scale was 68.2 (sd=12.6) out of a possible 85 points, indicating that they often or always engage in many of these activities. The parents report overall high levels of confidence in their parenting abilities with an overall mean score of 46.1 (sd=6.3) out of 55. Most commonly, parents reported high levels of confidence in knowing how to seek help for developmental problems and supporting their children's development. The parents also appear to understand the benefits of parental bonding on learning and development, with 98% of the parents correctly identifying how emotional closeness can influence a child's development.

The parents report high levels of satisfaction with the knowledge of the parent educators, with most of the parents rating the parent educators with a four or higher in all areas on a 1-5 point scale, where higher scores indicate more satisfaction. The parents report their educators to be both responsive to their needs (mean = 4.88, sd=.39) and respectful of their parenting practices (mean = 4.93, sd=.32).

## *Areas for Growth in Supporting Parents*

Although as a whole, the parents report overall high levels of confidence and knowledge in most areas, some of these areas differ by demographics. For example, parents under age 18 reported being less confident in their parenting activities than older parents ( $F(4,865)=2.4, p<.05$ ). There were also differences in literacy activities by education, with those who report less than a high school education participating in literacy activities less frequently than the other groups ( $F(4,805)=13.4, p<.001$ ). There was also a difference in the reading materials used by demographics, with those living in hotels/motels and shelters using fewer different reading materials than those who live in their own homes ( $F(5,834)=2.4, p<.05$ ).

In addition to targeted services to these groups, there were a few areas on the overall survey that had lower scores, indicating that the parents may benefit from some support in these areas. The first is in healthy behaviors. Many parents reported lower scores in knowing how to prepare healthy meals or how to prevent childhood obesity. In addition, they feel less confident in their ability to recognize a health or developmental problem on their own than in other areas measured.

Another area of potential support is positive discipline. Some of the lowest areas of parental confidence surrounded knowledge and use of positive discipline. The parents also rated the parent educators lower on "suggesting ways to deal with a child's challenging behavior" than the other items.

### *Child Outcomes*

The children served by these programs have demonstrated positive gains as well. Children's percentile rank in school readiness was in the 36<sup>th</sup> percentile at pre-test, indicating that on average, the children in the PAT programs scored better than 36 percent of same age peers. By post-test, the average percentile rank score was in the 43<sup>rd</sup> percentile, an increase of 7 points over the course of the year.

There was a statistically significant decrease in the proportion of children who were delayed or very delayed in their school readiness skills ( $X^2=9.5$ ,  $p<.05$ ) at post-test, with fewer children scoring in the delayed category. At pre-test, 36% of the children were delayed or very delayed; by post-test, only 26% of the children fell into the delayed or very delayed categories. In addition, 19% of the children scored in the advanced or very advanced category at post-test, compared to only 12% at pre-test.

In addition to overall increases, children had statistically significant improvements in all of the sub-domain categories between pre-test and post-test, with the greatest gains made in recognizing shapes with an 11% increase ( $t=7.1$ ,  $p<.001$ ) and sizes ( $t=10.4$ ,  $p<.001$ ) with a 13% increase. The children also made a 9% gain in letter recognition ( $t=7.3$ ,  $p<.001$ ); an increase of 8% for colors ( $t=6.1$ ,  $p<.001$ ); and an increase by 10% for numbers/counting ( $t=8.7$ ,  $p<.001$ ). The increases in percentile rank, proficiency levels and mastery of the different domain areas indicate that the literacy activities done with the parents may be helping children develop the necessary school readiness skills.

### *Areas for Growth in Supporting Child School Readiness*

For those children who primarily speak Spanish, there may be areas to increase support. The children who completed the assessment in Spanish scored significantly lower on percentile rank and were more likely to be delayed at post-test than the children who completed the assessment in English ( $X^2=31.4$ ,  $p<.001$ ). The largest differences were in letters and numbers, with Spanish speakers knowing less than 27% of their letters and 26% of their numbers at post-test compared to English speakers who knew 55% of their letters and 51% of their numbers. This may provide specific areas in which the parent educators can provide support to children/parents who speak Spanish.

As a whole, PAT program sites appear to have provided confidence, support for parents, and school readiness development for the children they serve.

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