

Sixpence 2014-2015 Annual Report

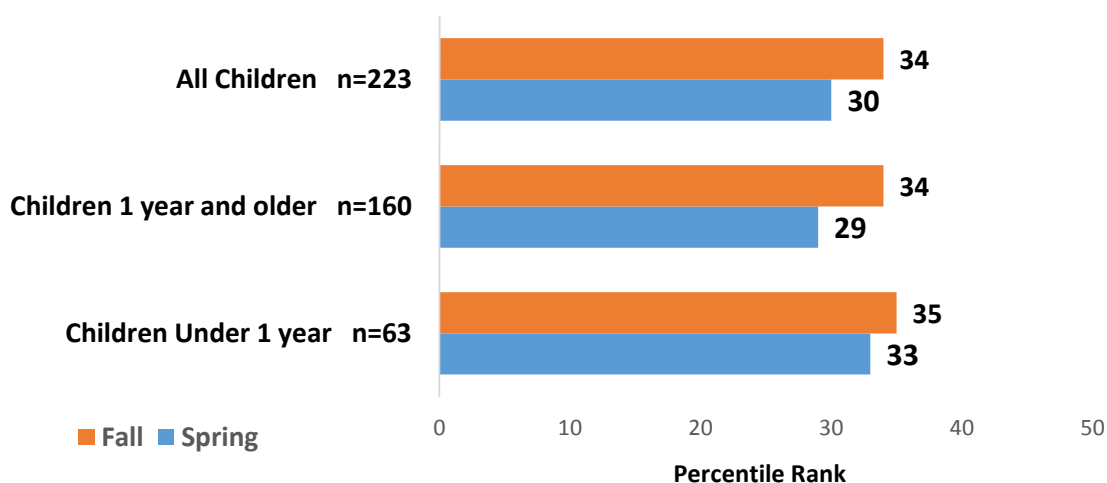
Addendum: November 2015

After the presentation of the 2014-2015 Sixpence annual report, the Sixpence board of directors posed several additional questions about child outcomes in the areas of language and family literacy practices. Additional analyses were completed and the following is a summary of those results,

What were the language outcomes from fall to spring based on age?

It was hypothesized that children's language production as measured by the MacArthur-Bates Communications Development Inventory, might vary by age. The scores were analyzed for two cohorts: children aged 8 up to 11 months and children aged 12 to 30 months as of October 1, 2014. The MacArthur is scored as a percentile rank.

Production scores declined from fall to spring, but the decrease was only significant for children aged 12 months and older. Scores were in the low average range for both age groups.



A paired samples analyses were completed to measure the change in production scores over time. The results found:

Children ages 8 up to 12 months: Fall (M=35; SD=32.65)/ Spring (M=33; SD=27.20), $p=.675$, $d=0.05$.
Children ages 12 to 30 months: Fall (M=34; SD=27.44)/ Spring (M=29; SD=28.34), $p=.022$, $d=0.18$.
All Children ages 8 to 30 months: Fall (M=34; SD=28.94)/ Spring (M=30; SD=28.03), $p=.038$, $d=0.13$.

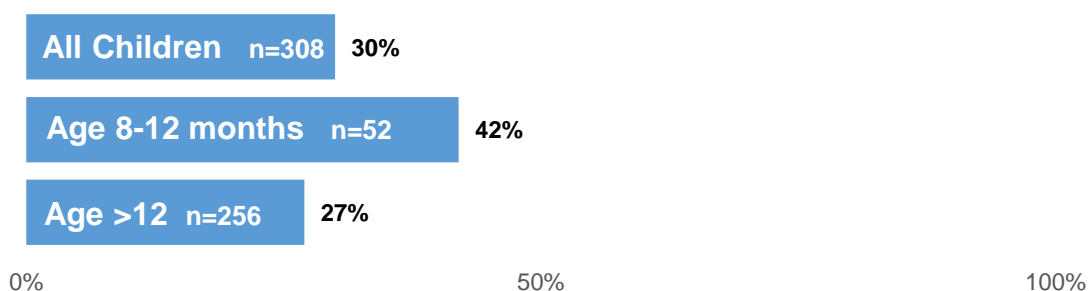
While scores decreased across time for both age groups, the change was only significant ($p=.022$) for children aged 12 months and older. The effect size of .18 approached the zone of desired results for meaningful change (.20 for assessment for young children). There was much variability in the scores across age groups. Across all ages, average language production scores were in the 29th to 33rd percentile rank by spring.

Did child age make a difference in meeting the program goal for language production by spring?

The evaluators analyzed the data to see if child age made a difference in the percentage of children meeting the Sixpence program goal for language production by spring. The Sixpence language goal is a standard score of 100, which is the mid-point of average. The results show that younger children, under 12 months of age, were more likely to meet the program goal than older children, age 12 to 30 months.

Younger children had better language production outcomes by spring than older children.

There was a significant difference in scores between age groups.



% of Children Meeting Language Production Program Goal

Higher percentage of infants met the program goal in language production than the toddlers served in Sixpence. An ANOVA analysis was completed to determine if there was a significant difference in spring production scores by age group. The results found that infants MacArthur production scores were significantly higher than toddler scores in the spring ($F(1.154) = 4.389, p = .037, n^2 = .02$). These results suggest a small effect size that is not within the zone of desired results for meaningful change.

It is not clear why younger children had stronger language production skills by spring than older children. The tool has a high bar for younger children, expecting that at 8 months of age, 95% of the children say at least one word. One might predict that this high bar would result in younger children having lower production scores than older children but the reverse was true.

One might wonder what impact a child's primary language would have on language outcomes. The MacArthur tool is offered in both Spanish and English and 34% of the Sixpence children are ELL. It is possible that children exposed to two languages have delays in production as they are processing vocabulary and making meaning while translating across the languages. However, previous analysis of English Language Learner (ELL) status and language outcomes indicated that the child's primary language did not make a significant difference in language results.

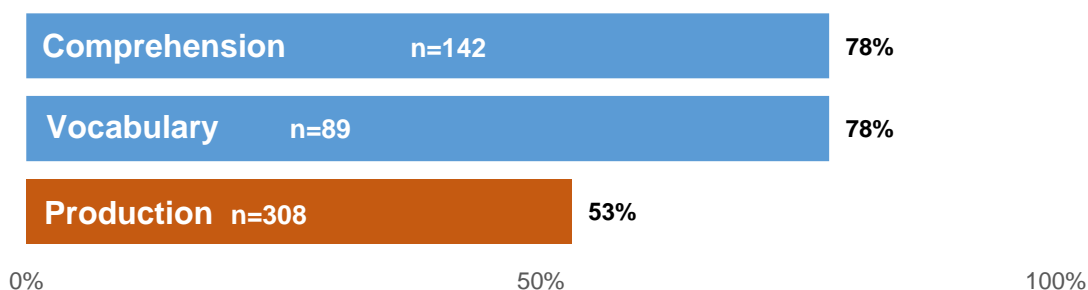
How many children had language skills in the average range by spring?

The Sixpence program goal is for children to score at the mid-point of average by spring. In the 2014-2015 program year, 53% of the children met the goal in language comprehension, 37% met the goal in vocabulary, and 30% met the goal in language production.

The Sixpence Board of Directors requested an analysis of how many children fell within the typical range or above, a standard score greater than 85.

Most of the children had language competencies in the average range and above by spring.

However, nearly half of the children had below average production scores.



% of Children Scoring in the Average Range and Above

If Sixpence children followed the national norm, one would expect that 85% would be in the average range or above for all three language areas. The children's comprehension and vocabulary outcomes approach the national distribution. However, language production scores far fall below national norms. Nearly half of the children (47%) scored in the below average range, which was at least one standard deviation below the mean. Surprisingly, 29% scored at the 5th percentile rank or below, which is a standard score of 75. It is unclear why language production outcomes lag so far behind the other competencies and so far below the mean. The small percentage (7%) of Sixpence children enrolled in early intervention services cannot explain this result.

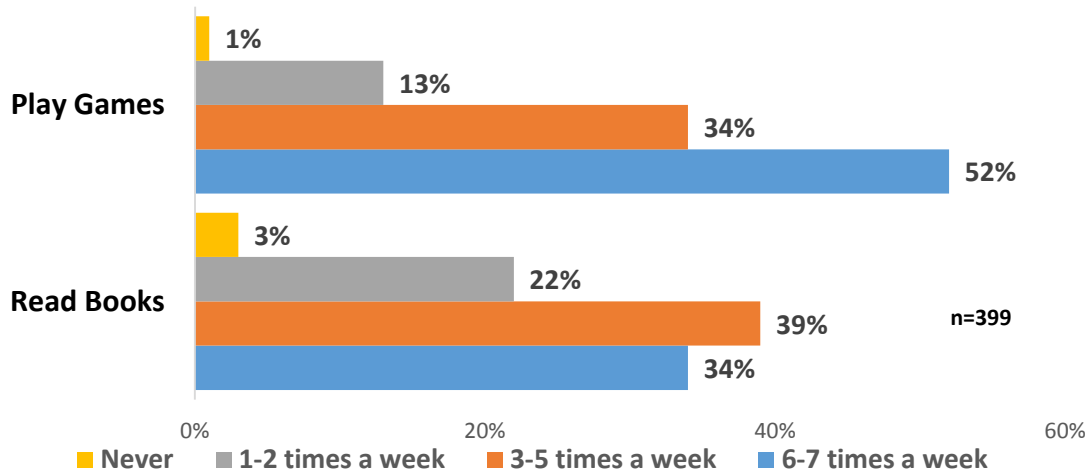
How often did Sixpence parents engage in literacy activities with their children?

Sixpence families were asked about the number of books in their home, and how often they read to their children. They were also asked about how often they played games and sang songs with their children. These literacy practices were recorded for 399 families.

The results indicate that high percentages of Sixpence families engage in literacy activities with their children. Most families (77%) had more than ten books in their homes and nearly all (94%) of the books were in the family's home language. High percentages of families play social games with their children.

There was minimal change in literacy practices from fall to spring. An area for improvement could be increasing the number of families who read daily with their children.

Most (73%) Sixpence parents read to their children at least 3 times a week and even more (86%) play games and sing with their children. Only a third read to their children almost every day.



Conclusions

The language results suggest that child age at the time of assessment had an impact on outcomes. Overall, the language production scores were low in the fall and spring, with average scores in the 29th to 34th percentile. Children who were older had a significant decrease in skills that was not found with younger infants. Further analyses found that there was a significant difference between the spring production scores of the two groups. A higher percentage (42%) of younger children met the program goal by spring compared to the percentage (29%) of older children.

Of interest is what is contributing to these findings. Several factors may account for these differences and need further assessment including the following:

1. Does the child's environment have a greater influence on children's language as the child gets older?
2. To what extent are the home visitors or early childhood classrooms focusing direct instruction and parent-child interaction facilitation on language and literacy activities? Do the children have better language outcomes with the home visitors or classroom teachers who provide more intentional instruction around literacy?
3. Were the decreases in vocabulary skills restricted to this communication construct or related to other receptive and expressive language skills?

The examination of the percentage of scores in the average range revealed some concerning results about language production. While a strong majority (78%) of children demonstrate comprehension and vocabulary skills in the average range, far fewer (53%) demonstrate average language production skills.

Further analysis indicates that 29% of the children score in the 5th percentile and below. This raises the question about the validity of the language measure. A pilot of a new language assessment, the DAY-C, and a comparison of those results to the MacArthur, will help determine if the MacArthur is the best measure of language production skills.

The majority of Sixpence families engage in literacy activities with their children at least three times a week. Program staff may want to focus on increasing the rate of daily reading as most families (66%) do not reach this level.

Munroe-Meyer Institute: A University Center of Excellence for Developmental Disabilities

Addendum Report prepared by
Barbara Jackson*, Ph.D., Rosie Zweiback, M.A, Lisa Alvarez, B.S
Interdisciplinary Center of Program Evaluation
The University of Nebraska Medical Center's

