Reach Out and Read Assessment: The Final Report

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Introduction

Reach Out and Read (ROR) is a national family literacy program. A local ROR requested an evaluation of their program to validate the program for its stakeholders. The main objective was to answer the question: is the program evidence-based?

The Reach Out and Read Assessment (RORA) project evaluated the local ROR program with an oral (bilingual) survey and a child assessment using the PLS-4: Preschool Language Scale, Fourth Edition (Zimmerman, 2002) instrument. A sample of families was asked to participate at their child's six month-old well-baby visit with a follow-up at the 12-month well-child visit. Impact of the local ROR program on the families was measured against a control population as well.

The purpose of the quasi-experimental study was to evaluate the effectiveness of the local ROR program and to provide feedback to the program, the volunteers, the medical community, and the research community. Previous research done with a similar questionnaire had shown positive results for the early literacy intervention (ROR, 2001; ROR, 2003-2006). Could the survey findings be replicated with a small sample? Can an assessment of the children show positive results with the youngest age group in a ROR program? The project expected to add to the growing research base which is showing that early literacy interventions have a positive impact on children.

An objective of early literacy interventions is to increase the school readiness abilities of young children at an age when parent input is significant (National Scientific Council on the Developing Child, 2004; Dickinson, 2006). Literacy abilities at kindergarten have been shown to be related with reading abilities in the later elementary years (National Center for Family Literacy, 2005; Dickinson, 2006).

In the past 20 years, early literacy has become a frequent message directed toward parents in our society. ROR and other family literacy programs empower young parents by helping families to understand the connection between activities when the child is six months of age and learning to read during the school years. Shared book reading has been shown to enhance language, not the early literacy skills directly. Increasing a child's vocabulary before learning to read can impact phonological awareness and listening comprehension. Learning vocabulary indirectly assists in learning to read (Dickinson, 2006). The National Early Literacy Panel has compiled a synthesis of early literacy research (National Center for Family Literacy, 2005).

Background

"Reach Out and Read is a national non-profit organization that promotes early literacy by giving new books to children and advice to parents about the importance of reading aloud in pediatric exam rooms

across the nation (ROR, 2003-2006)." The ROR model includes that "physicians and nurses advise parents that reading aloud is the most important thing they can do to help their children love books and to start school ready to learn (ROR, 2003-2006)."

THE REACH OUT AND READ MODEL (ROR, 2003-2006)

PEDIATRICIANS AND OTHER CLINICIANS ARE TRAINED IN THE THREE PART ROR MODEL IN AN EFFORT TO PROMOTE PEDIATRIC LITERACY:

1. AT EVERY WELL-CHILD CHECK-UP, DOCTORS AND NURSES ENCOURAGE PARENTS TO READ ALOUD TO THEIR YOUNG CHILDREN, AND OFFER AGE-APPROPRIATE TIPS AND ENCOURAGEMENT. PARENTS WHO MAY HAVE DIFFICULTY READING ARE ENCOURAGED TO INVENT THEIR OWN STORIES TO GO WITH PICTURE BOOKS AND SPEND TIME NAMING OBJECTS WITH THEIR CHILDREN.

2. PROVIDERS GIVE EVERY CHILD BETWEEN THE AGES OF SIX MONTHS AND FIVE YEARS A NEW, DEVELOPMENTALLY APPROPRIATE CHILDREN'S BOOK TO KEEP.

3. IN LITERACY RICH WAITING ROOM ENVIRONMENTS, OFTEN WITH VOLUNTEER READERS, PARENTS AND CHILDREN LEARN ABOUT THE PLEASURES AND TECHNIQUES OF LOOKING AT BOOKS TOGETHER

The local Reach Out and Read program uses the ROR model, with slight modifications. Physicians reported that a typical well-child visit, between six months and five years of age, consists of the doctor introducing a book at the end of the visit, so it is the last thing that the parents hear, and modeling how to read the book with developmentally appropriate suggestions. For example, at six months, 1-2 pictures/pages are read to the child; at 12 months, 3-6 pictures/pages are read. Advice to parents begins at six months with the suggestion of reading 2-3 minutes, 3-4 times a day. The reading of sounds and naming of objects in the pictures is suggested and modeled. As the child grows older, the suggested amount of time spent in a reading session increases, with age-appropriate interactions between the parent and child being modeled. For example, at 12 months, modeling includes pointing and naming of the objects in the pictures, as well as asking questions, and taking the child's finger to point at the pictures. The doctor models in Spanish language, if Spanish is the primary home language. Then, the doctor gives the book to the child. Some ROR programs write a prescription for the parent to read to the child. This ROR chooses to reduce the paperwork the parent has to deal with. The principle difference from the ROR model is that the study ROR models book reading at the end of the visit.

The Reach Out and Read Assessment (RORA) project was initiated in 2004 at the request of the ROR Coordinator for the new, local program. In September, the Texas A&M University Institutional Review Board – Human Subjects in Research approved the protocol.

Because of the need to hire a bilingual assistant, the project did not begin until July of 2005 at the ROR (treatment) site. In short order, final approval at a control site was secured and the study began at the control site within a week of completing 22 families at the ROR site. The control site was completed in October of 2005 with 20 families participating. The follow-up with the 42 families was planned for six months later.

Figure 1: ROR READING CORNER
Photo by J. Gramann

Method

The survey and assessment sites consisted of the experimental site, or Reach Out and Read treatment, and a control site, without a Reach Out and Read program. At the time of the study, both sites were medical facilities serving young children, including those from underinsured families. Children and their parents came to the medical sites for routine well-child visits and health care.

The sample population came from a small city and nearby, surrounding communities. The city population make-up included 17.72% African American, 27.8% Hispanic, and 64.65 % White, according to the 2000 census. A total of 14,873 families were in the community with 15.5% of the families falling below the poverty line (Wikipedia, 2007).

Before the project began in each of the sites, the medical staffs expressed concern that there would be more participant families than could be logistically accommodated. Once at the sites, the randomized selection of families was abandoned for simply seeking participation from every family arriving for a six month well-child visit with the pediatricians in a time frame agreed upon by all involved. It was found that the staffs underestimated the number of families coming in for a six-month well-child visit right at six months of age.

Data Collection: RORA Parent Survey
Data collection was administered by the principal investigator at the child's 6 month well-baby visit with the help of an assistant. A follow-up was completed with the principal investigator at the 12 month well-child visit. At both visits and both sites, a parent survey and a child assessment were completed.

The RORA parent survey was an updated and lengthened version of the Before and After Books and Reading (BABAR) parent survey designed by ROR co-founder, Robert Needlman, MD (ROR, 2001). A

complete survey can be found in the appendix. Questions that were replications from the BABAR parent survey included the following questions:

- What are your three favorite things to do with [child's name] these days?
- What do you do to help prepare [name] for sleep at night?
- Is there anything you do with [name] now that will help him/her be successful when he/she goes to kindergarten?
- Do you ever read children's books to [name]?
- How many books altogether do you have at home that you read to [name]?
- How many days each week do you read children's books to [name]?

Other questions were modified in some way from the BABAR questions and included the following:

- What languages are spoken in (by) your home/family?
- How many years of school have you completed? Where?
- Altogether how many books for reading to your child have you received from the doctor or nurse here?

Additional questions were designed to elicit additional information about family literacy and included the following:

- Which of the following have you used or read in your home during the last week?
  ___ books ___ magazines ___newspapers ___ paper and pen
- How many other adults are in the home?
- How many other children are in the home?
- Do any of the other adults (or older children) read to, sing to, or tell stories to [name]?

Questions designed to further validate the ROR model at the second visit included the following questions:

- Has [child's name] doctor talked with you or your family about reading to [child's name]?
- Did the doctor give you good ideas about how to read to [child's name]?
- Have you ever seen volunteers reading to children in the waiting room here?
- Did your child listen to the volunteers reading in the waiting room?

Data Collection: PLS-4—Child Assessment

The PLS-4: Preschool Language Scale, Fourth Edition (Zimmerman, 2002) was used for the child assessment at the 6 month and 12 month ages. Subscales from the standardized test include auditory comprehension and expressive communication and yield norm-referenced scores. A total language score was also provided. Both the Spanish and English language versions were used.

The Sample

All families asked to participate at the first visit agreed and expected to be contacted again at the 12 month well-child visit. Compensation was two board books from ROR, an *I Am Your Child* video tape, and reading information from the National Institute for Literacy (the information and videos were provided in either Spanish or English).

Of the 22 families participating at the ROR site, one participant family was immediately removed from the sample, because his age was not close to six months. On completion of the whole project, three more participant ROR families were removed from the sample as their ages at one of visits was more than a month off of the others. Three families did not show up for the second visit. Families that did not show up for appointments did make it to the next scheduled appointment 50% of the time. Rescheduled appointments after that were not kept, or were made when the child was much older than six months. One family could not be contacted by phone or by mail. The final sample from the ROR site, completing both visits, was 14 families.

At the control site, one participant family was removed from the 20 families because the parent was on the staff at the clinic and had heard our presentation about the project. By the second visit, one participant family had moved away; three could not be contacted by phone or by mail; two could not be scheduled while the child was close to 12 months; two were no shows repeatedly; and one refused to participate because of time. Two of the final 10 participant families needed to be rescheduled for another appointment. These numbers indicate some of the limitations of getting a good sample for experimental research.

In the final sample of participant families for the RORA project, 60.9% were from the treatment site and 39.1% were from the control site. Of the 24 adult participants, 22 were Hispanic, one was African American, and one was White. All of the adult participants who primarily answered the parent survey questions were the mothers of the children. In the final sample, 78.3% of the participant families chose to have the parent survey and child assessment conducted in Spanish language, and 21.7% chose English language. Responses about the home language found at the ROR site found 14.3% were bilingual and 85.7% Spanish. Informal notes recorded three of the ROR site Spanish speakers had a small amount of English language. At the control site, the breakdown was 11.1% English; 33.3% bilingual; and 55.6% Spanish.

The ROR group reported an average of 7.6 years of school completed. The control group reported 8.4 years of school completed. At the ROR site, 85.7% of participants attended school in Mexico and 14.3% attended school in Texas. The control site found 55.6% attended school in Mexico and 44.4% attended school in Texas.

At the time of the study, the sample from the treatment (ROR) site represented a population that was underinsured. The control site had health services available for all, but in being one of the top providers for well-child check-ups, the population sample did reflect the underinsured. Informal conversations with the control site participants in the final sample revealed that at least three of the parents were currently enrolled in special programs for students with children in local school districts. The students were enrolled in child development classes. While the population samples were similar on the surface, they were not identical.

The sample reflected parent participants born in Mexico and the United States. Final statistics reflected the ROR site as having 85.7% of participants from Mexico and 14.3% from the United States. At the control site, 55.6% were from Mexico and 44.4% from the United States. This difference in the number of recent immigrants, contributed to contrasts in the data results.

Sixteen of the children were male and eight were female. All of the birth weights fell in the normal range. The average age of the children at the first visit was 6 months-8 days; 6 months-7 days for the treatment group; and 6 months-10 days for the control group. At the second visit, the average age was 12 months-6.6 days; 12 months-4.8 days for the treatment group; and 12 months-9 days for the control group.

The initial look at the 24 families in the parent survey revealed an outlier from the control site. The outlier was a family displaced to the area by a hurricane. In reporting the number of books at home during the second visit, the number of books reported for one child was completely out of line with the rest of the sample. The outlier was removed for the data analysis. Analysis of the data was conducted on 14 treatment site participant families and 9 control site participant families.

Interview Process

Disruption of the normal procedures at a well-child visit was minimized as much as possible, with the survey and assessment completed before the pediatrician completed the exams. Roughly two months were

spent visiting each site for the first visits and, again, for the second visits. Cooperation and understanding from the nursing staff are critical to the success of such a project.

The parent survey was conducted as a verbal questionnaire, in Spanish or English, in a clinic exam room with all participants seated. Printed copies of the survey were available at the interview with questions and instructions in Spanish and English. During the first visit, introductions to the principal investigator and a bilingual assistant were made, permissions were secured, and questions about the purpose of the study satisfied. As the study sample involved mostly Hispanic families from Mexico, the primary bilingual assistant, a Hispanic woman, through nearly all of the first visits also needed to reassure the families about the purpose of the study. Without this careful introduction to RORA, completing the second visits may have been less successful.

Parent survey questions were asked by the assistant or the principal investigator and quickly recorded on the survey instruments, attached to clipboards. All of the assistants used in the RORA were trained ahead of time in asking the questions in a consistent, non-leading manner, without any misleading comments about responses, and remaining nonjudgmental.

During the questionnaire time, informal play with toys not involved with the child assessment were introduced by the principal investigator on a small rolling table placed in front of the child, who always sat on the mother's lap.

Figure 2: RORA ROLLING TABLE AT ROR SITE
Photo by J. Gramann

In addition, the principal investigator and the assistant noted occasional qualitative observations informally on their clipboards during the interview and assessment process. As the parent questions finished, the PLS-4 assessment began by introducing new toy selections to the table and removing the other toys to shelves under the rolling table. The child assessment was conducted in an informal, low-key, play atmosphere with simple verbal cues only when needed. The parent was elicited into the play process as needed and provided responses to the questions about what the child has done at other times. The principal investigator conducted all of the child assessments, striving for consistency across all subjects.

Findings

The parent survey and child assessment quantitative findings follow. Key findings about differences between the ROR and control groups were tested using an ANOVA of gain scores between 6 and 12 months. Because of the small sample sizes, all tests were evaluated against an alpha level of .10.

Data Analysis: The Parent Survey
A research concern was revealed during the follow-up visits at the control site. As the parents were reporting that a physician had talked to them about reading to their child, the nursing staff was questioned. The surprising answer was that the control site families were routinely advised to read to their children. During the 6 month well-child check-up, it was suggested that parents read books for a few minutes everyday. The control site was less than ideal for the complete three-part ROR model. The points not directly influenced in the RORA survey were those concerning receiving books and observing reading volunteers.

The three initial questions attempted to elicit responses containing the words "reading" or "book." If, after prompts to get three responses for each question, the parent used one of the words, a "yes" was recorded.

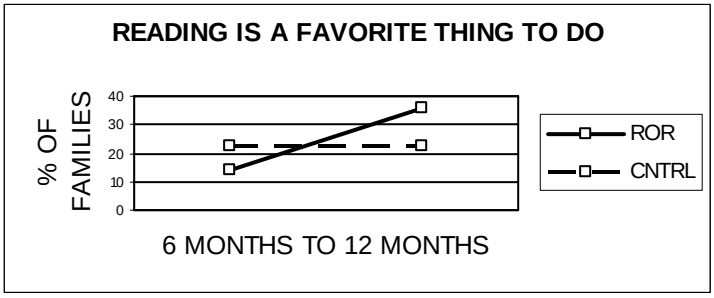

Figure 3: READING IS A FAVORITE THING TO DO

Between 6 and 12 months, the number of ROR parents who mentioned reading as one of three favorite things they did with their child jumped from 14.3 % to 35.7 %. The control group remained unchanged at 22.2%. See Figure 3. Although this difference in gain was statistically insignificant ($F = .63$, $df = 1,21$, $p = .44$), the trend is positive. The sample could have been influenced because least three of the control site parents were students being enrolled in child development classes at local high schools.

Neither group read to their children at bedtime at 6 months. At 12 months, both study groups showed almost identical increases, 35.7% for ROR parents and 33.3% for control parents. This says more about the parent perceptions about child development. By 12 months, more parents may be more inclined to feel that their child is ready for a story in the bedtime routine than they are at six months of age.

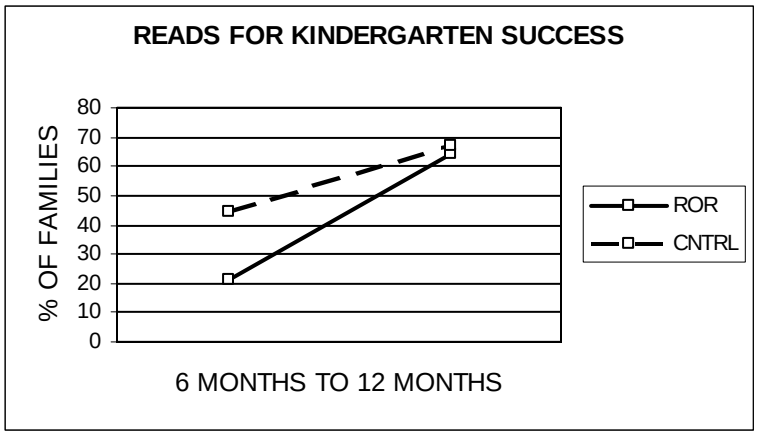

Figure 4: READS FOR KINDERGARTEN SUCCESS

The question about what the parents do now for success at kindergarten found the ROR group gaining from 21.4% at 6 months to 64.3% at 12 months by mentioning reading. See Figure 4 for a look at a somewhat positive trend. The control group changed less, from 44.4% to 66.7%. This was insignificant at p= .10.

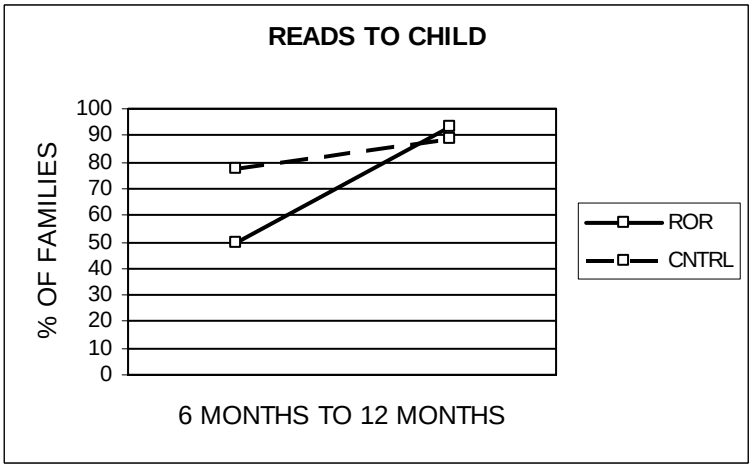

Figure 5: READS TO CHILD (significant change)

The next questions look at book reading. “Do you ever read children’s books to [name]” reflects the ROR group gaining more. An ANOVA of the gain scores showed a significantly greater change in the ROR group than in the control group parents reading to their children ($F = 2.69$, $df = 1,21$, $p = .10$). At 6 months, 50% of ROR parents said they read children’s books to their infants. By 12 months this increased to 93% of ROR parents reading. By comparison, 78% of control parents read to their children at 6 months, increasing to 89% at 12 months. See Figure 5. In other words, at 6 months more parents in the control group were reading to their infants, but by 12 months this pattern had reversed: a greater proportion of ROR parents read to their children.

When the parent replied that they did not read to their child, “is he/she too young for that” was asked. Five parents responded that their child “was too young for that” in the ROR group, at 6 months. In the control group two parents replied the same way at 6 months. At 12 months, only one parent in the whole sample replied that they did not read to the child because they thought they were too young. This participant was at the ROR site and had only been at the clinic once. Parent perceptions are critical when educating about why it is important to read to the very young child.

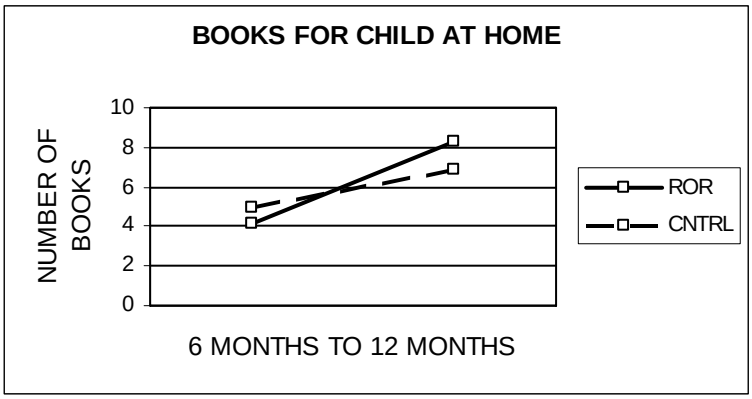

Figure 6: BOOKS FOR CHILD AT HOME

The question, "how many books altogether do you have at home that you read to [name]," was asked of the parents. The ROR site reported a mean of 4.1 books at 6 months and 8.3 books at 12 months. Control group parents reported a mean of 5 books at 6 months and 6.9 at 12 months. See Figure 6. Two ROR families reported less books at 12 months, which may contribute to the insignificant results ($F = .59$, $df = 1,21$, $p = .45$). The number of ROR families reporting having books at home increased from a total of 7 families at 6 months to a total of 13 families at 12 months.

Another question, "How many days each week do you read children's books to [name]," was asked of the parents. The ROR site reported a mean of 1.6 days/week at 6 months and a mean of 2.6 days/week at 12 months. The control site mean was 3.1 days/week at 6 months, increasing to 3.8 days/week at 12 months. The largest gain between 6 and 12 months occurred at the ROR site, however it was statistically insignificant ($F = .09$, $df = 1,21$, $p = .77$).

The Follow-up Visit

Five additional questions were asked during the follow-up interview at the 12-month check-up. Their purpose was to validate part of the ROR model.

At the ROR site, 64.3% of parents said that their doctor talked to them about reading to their child. At the control site, the corresponding percentage was 66.7%, a statistically insignificant difference (chi-square = .01, $df = 1$, $p = .91$). As previously mentioned, the control site physicians did talk to families about reading to their children.

More ROR parents said doctors gave them good ideas about how to read to their children (64.3%) than did control parents (44.4%). However, this difference was again statistically insignificant (chi-square = .88, $df = 1$, $p = .35$).

As expected, ROR parents received significantly more children's books from a doctor (mean = 2.4) than did parents at the control site (mean = 0; $F = 18.15$, $df = 1, 21$, $p < .001$).

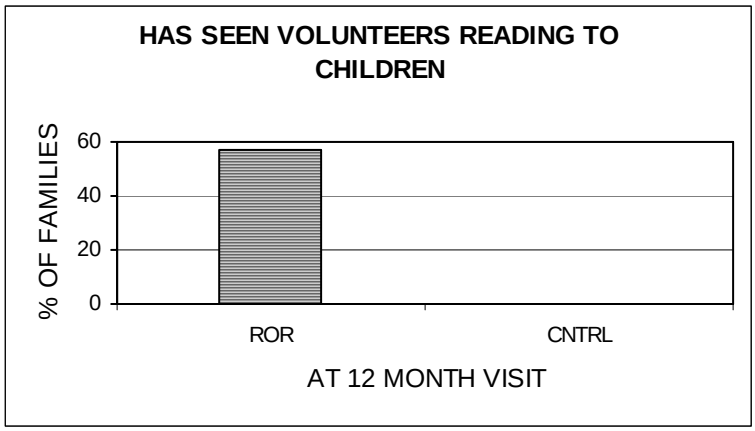

Figure 7: HAS SEEN VOLUNTEERS READING TO CHILDREN

When asked if they had ever seen volunteers reading to children in the waiting room, 57.1% of ROR parents indicated they had, compared to none of the control-site parents (chi-square = 7.89, df = 1, p = .005). See Figure 7.

Finally, ROR parents were significantly more likely to say their children had listened to volunteers reading (35.7%) than was the case with control-site parents (0%; chi-square = 4.12, df = 1, p = .043). Given that 12 months is young enough to often be sleeping or easily distracted, this number may be regarded positively.

Data Analysis: The Child Assessment

The PLS-4 instrument (Zimmerman, 2002) assesses children for an auditory comprehension score, an expressive communication score, and a total language score. All of the child assessment scores were insignificant. As the control site was less than ideal, this is not surprising. In addition, the final sample size was very small. Also, the very young age being assessed might be too young to show a difference at such a short interval. A summary of the assessment scores follows.

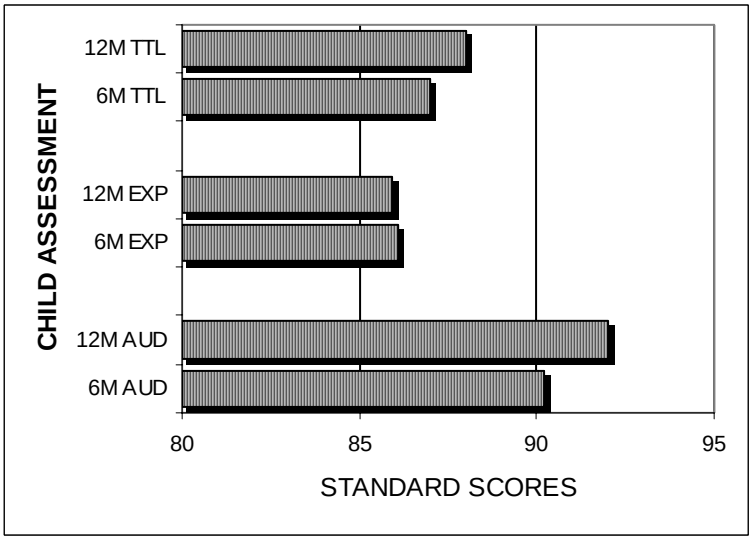

Figure 8: CHILD ASSESSMENT SCORES

The total sample mean scores for auditory comprehension were 90.2% for the 6 month-olds, increasing to 92% at the age of 12 months. At 6 months of age, the expressive communication means were 86.1%, and

a very close score of 85.9% at 12 months of age. All of the twenty-three subjects had a total language score of 87% at 6 months of age, and an 88% at 12 months of age. See Figure 8.

Looking at just the ROR site, the mean score for the auditory comprehension assessment for the 6 month-olds was 89.2%, increasing to 92.8% at 12 months. For the expressive communication assessment at 6 months, the mean was 85.4%, and a similar 84.6% at 12 months. The total language score means at the ROR site for the 6 month-olds was 85.9%, and 87.6% for the 12 month-olds.

The control site means were as follows. The auditory comprehension assessment mean score at 6 months was 91.7%, and 90.9% at 12 months. Expressive communication score means were 87.3% at 6 months, and almost no change with 87.9% at 12 months. The control site total language score means for the 6-month age were 88.7%, and a nearly identical 88.4% for the 12-month age group.

In calculating the age equivalents for two assessment visits, using the PLS-4, the total sample of children were 5.5 months and 11.7 months, respectively. The children were on target developmentally as the children had just reached the 6-8 month and 12-17 month assessment age ranges. This may be viewed as a positive result. Further research question: what happens between 12 months of age and entering kindergarten?

Conclusion

The local ROR family literacy program, part of the national Reach Out and Read (ROR, 2003-2006) organization, had a positive impact on the community, reaching the families most in need of literacy assistance. ROR site parents had an education level of 7.6 years and reflected an underinsured population. The Reach Out and Read Assessment project evaluated and found the following key points:

- The strongest finding was that of the ROR parents reading in a greater proportion by the time their children were 12 months of age when compared to the control parents.
- The number of books given out by the program, the volunteers reading in the waiting room, and the very young children listening to stories being read in the waiting room were all significantly greater at the ROR location.
- The local ROR program was shown to be evidence-based. Overall, trends in the data were positive, with some findings being statistically significant. Results supported the ROR program model.
- The ROR intervention appeared to have no effect on PLS-4 (Zimmerman, 2002) scores from 6 months to 12 months of age. At this youngest age group, it may be too early for the PLS-4 to be a valid measure for an invention impact, or with assessing just a 6 month interval. The children as a group assessed at their appropriate age equivalents, a positive outcome for the families.

The quasi-experimental study added to the early literacy research base. In comparing published data results from the similar BABAR parent survey by Needlman (ROR, 2001), one of the significant findings from both studies was identical. Results with the BABAR instrument in ROR sites, with 1,006 children from ten sites, indicated that 93% (from 88%, $p < .02$) of the parents reported reading to their child. The RORA project, with 23 children, had the same 93% response (from 50%, $F = 2.69$, $df = 1,21$, $p = .10$) with the same question. The BABAR study differed by including children, aged 6 months to five years, and a follow-up interval of one year. Because parents are more likely to read more to older children, the findings are more interesting than analogous.

Another ROR research paper by Weitzman (2004) also found 93% parents reporting to be reading to children. The study used a waiting room interview and a home visit to collect data using the Home Observation for Measurement of the Environment (Caldwell, 1984) instrument.

Key to the RORA findings was the positive trend in physician and volunteer readers modeling; and the giving of a book to the child. These were contributing factors for the significant gain in reading to their children by the ROR group when compared to the control group. ROR training video resources mention an inappropriate "lollipop" strategy of giving books at the end of the visit as a "reward," with no modeling (ROR, 2003-2006). The RORA data emphasizes how significant the pediatrician modeling with a book is to success in parents reading more to their children. The reading volunteers reinforced this crucial aspect. Local ROR physicians model at the end of the visit so it would be the last thing the parent hears.

Assumptions and Limitations

Assumptions were that the treatment and control sites served a similar population, with only the treatment site receiving early literacy information. The local ROR program not only provides books, volunteer readers, and research-based information, but a structure for delivery of a literacy program to provide additional positive outcomes from the pediatric clinic. An assumption was that parents are typically enthusiastic about cooperating with a professional demonstrating a sincere interest in their child.

Limitations were expected due to the transient nature of the population. Until the project was well underway, the full impact of the limitations was not known. The lack of phones, language barriers in general, and not attending to well-child appointments promptly all contributed to the difficulties of contacting many participant families fitting the specific age groups needed. The logistics of the follow-up visits were more difficult to overcome than expected.

The small sample was a limitation. Literacy markers were to be identified by asking the parents if they had used a magazine, newspaper, book, or pen and paper in the last week. No findings were identified to substantiate the literacy markers because of the small sample size and the fact that some parents were still in school.

Information about other adults in the home, such as another parent, siblings, or extended family may impact literacy in the home by providing more family to read, sing, and tell stories to younger children. The answers to the questions were mostly affirmative to other adults and siblings being in the homes and to them reading, singing, and telling stories to the infants. However, the small sample size did not allow for any relationships to be seen.

A limitation results after asking parents questions about their parenting activities and in doing a child assessment with the parent. This phenomenon is especially evident when working with infants and toddlers. Parents are often so involved with daily caring responsibilities that they are unaware or not expecting their child to reveal logical play patterns during the assessment activities. When the questions and child activities are conducted, the parent views their child in a new way. All of the families in the RORA project may have increased parent-child reading and play activities after the first visit, regardless of which group they were in.

Finally, another limitation was revealed during the follow-up visits at the control site. The control site was less than ideal in that the medical staff did encourage families to read to their children. In addition, at least three of the control site parents were enrolled in high school programs designed to assist teenage mothers with infants. These factors may have influenced the control group. In a way the control group did provide a contrast by showing how important ROR may be with families that have less opportunities and education.

Next Steps

Next steps can be drawn from the qualitative information and quantitative findings for program improvement. When a father was present, those few fathers chose not to take the lead in answering questions, but typically seemed to know more English. Comfort levels were always in the primary home language, even with the bilingual participants. Research indicates that learning strategies are not diminished when a home language is maintained rather than extinguished (Tabors, 1997; Goldstein, 2004). Therefore, ROR books that are bilingual would be a better choice. ROR may find locating English Language Learner classes important information to provide. Collaboration with or information about other community resources for families could be investigated to provide more literacy support for families (Harvard Family Research Project, 2005).

After interacting with all of the families, some multigenerational, it was clear that expectations were for the infants to learn English and be successful in school. ROR, even when not known by name, was a type of program welcomed by the families. While the naming of the family literacy program may be unimportant to program outcomes, a suggestion is to have a colorful *Reach Out and Read* "Reading Corner" label be placed in the waiting room reading corner. This label could be painted on the wall or on a small, colorful bookcase. A colorful bookcase is suggested as the books and reading corner purpose would be more evident when the volunteers are not reading. A small selection of books would be more visible and encourage children to look at the books. Parents may choose to read to their children while waiting as well. The environment needs to be print-rich.

One method to consider for on-going program success may be to target well-child visiting hours for reading volunteers. A record could then be kept, documenting hours spent reading. The hours may be counted or assigned a monetary value for reporting and/or recognition of the volunteer groups or individuals.

A revised and redesigned literacy survey, *Family Literacy—Short Survey (FL-SS)* (Gramann, 2007), is suggested and can be found in the appendix for program evaluation. A few of the questions from the RORA survey are included with a new question. The addition of "have you used the reading corner in the waiting room to read to your children" would add another piece of information to program evaluation. FL-SS is a revision in answer to the call (ROR, 2001) to develop workable methods for monitoring ROR, and with modification, other family literacy programs, in an on-going basis.

Best Practices in Family Literacy

One goal of this study was to summarize how its findings inform best practices for application in family literacy programs. Findings support the following best practices in family literacy:

- To encourage parents to read early and often to their child.
- To model ways parents can read a book to their child.
- To repeat the reading message multiple times to the parents.
- To provide and assist the parents in locating children's books for the child.

Parent perceptions are vital when educating about why it is important to read to the very young child. Early literacy begins at birth and is a lifelong endeavor (Neuman, 1998). Reinforcing that the very young child is ready to learn and methods to engage the child in literacy and learning activities should be repeated messages. Family strengthening and increasing family resiliency are indirect outcomes of an integrated family literacy program (Shonkoff, 2000). Literacy is a family affair, with modeling of reading being the critical element.

In conclusion, a Reach Out and Read participant shared the following comment about the ROR family literacy program:

"me ayuda para saber como mi hiña puede aprender mas cosas, y tambien a saber como se desarrollan sus avilidades como, leer, mirar colores y haser o tras cosas—
It helps me because my daughter can learn more things, and she also knows how to expand her abilities, like how to read, see colors, and other things."

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Appendix

Parent Responses from the ROR site about their Reach Out and Read experience

- "It's real nice to have the children read to because this way they are interested in something while they wait to be seen." ["Es muy bueno que les vengan a leer a los niños porque asi se entretienen en algo interesante mientras esperan su cita."]

- "help educate," "getting ready for school," "wants to learn English for school—singing and speaking"

- "good" ["bien"]

- "good program," "interesting," "very helpful"

- "It helps me because my daughter can learn more things, and she also knows how to expand her abilities, like how to read, see colors, and other things." ["me ayuda para saber como mi hiña puede aprender mas cosas, y tambien a saber como se desarrollan sus avilidades como, leer, mirar colores y haser o tras cosas."]

RORA Parent Survey

REACH OUT AND READ ASSESSMENT

ID number _____

INSTRUCTIONS:
#1-3: If only gives 1 or 2 things, prompt "Is there anything else?" If vague (e.g. we play) prompt, "What do you do when you play together?"
"¿Hay otra cosa mas?" ***"¿Qué hace usted cuando juegan juntos?"***

INTRODUCTION:
These questions will help me understand your child. I would also like to enter your answers, without including your name or any other identifying information. Is that okay? **Estas preguntas me ayudaran a mi para poder entiender a su niño/a. Tambien quisiera incorparar sus repuestas sin incluir su nombre o cualquier tipo de informacion. ¿Esto es acceptable para usted?**

1. What are your <u>three</u> favorite things to do with [child's name] these days? **¿Estos días, cuáles son sus tres cosas preferidas que le gusta hacer con su niño/a [name]?** ***(3)***
___ yes/si (mentions "read" or "book") *___no (does not mention "read"/"book")*

2. What do you do to help prepare [name] for sleep at night? **¿Por la noche, qué es lo que usted hace para ayudar a su niño/a [name] dormir?** ***(3)***
___ yes/si (mentions "read" or "book") *___ no (does not mention "read" or "book")*

3. Is there anything you do with [name] now that will help him/her be successful when he/she goes to kindergarten? **¿Qué es lo que hace usted ahorita para preparar a su niño/a [name] para el grado kinder?** ***(3)***
___ yes/si (mentions "read," or "book") *___no (does not mention "read" or "book")*

4. Do you ever read children's books to [name]? **¿Usted lee libros de niños a [name]?**
___ yes/si—to Q5 *___ <u>no</u>—<u>is he/she too young for that?</u>* **<u>o piensa usted que su niño/a es demasiado joven para eso</u>?**
___ <u>yes/si—to Q7</u> *___ <u>no—to Q7</u>*

-5. Name some children's books that you have at home and read to [name]. After parent names some books, ask: How many books altogether do you have at home that you read to [name]? **¿Qué son los nombres de los libros que usted le lee a su niño/a [name]? ¿Cuántos libros tiene en su hogar para leer a [name]?**
Enter a number only, not words: _____

6. How many days each week do you read children's books to [name]? **¿Cuántos días de la semana lee usted a su niño/a [name]?**
___1 *___2* *___3* *___4* *___5* *___6* *___7*

--7. Which of the following have you used or read in your home during the last week? **¿Durante la semana pasada, cuáles de los siguiente articulos ha leido usted?**
Check all that apply: *___ books/libros* *___ magazines/revistas* *___newspapers/periodicos* *___ paper and pen/papel y pluma*

8. What languages are spoken in (by) your home/family? **¿Qué idiomas se hablan en su hogar?**
Check all that apply: *___English/ingles* *___Spanish/espanol* *___other/otra idioma _____*

9. How many other adults are in the home? **¿Aparte de usted, cuántos adultos viven en su hogar?**
Enter number: _____

10. How many other children are in the home? **¿Aparte de su niño/a, cuántos niños viven en su hogar?**

_____ what ages? que son sus edades? _____

11. Do any of the other adults (or older children) read to, sing to, or tell stories to [name]? **¿Los otros adultos (o otros niños) que viven en su casa, leen, cantan o cuentan historias a su niño/a [name]?**

___ *yes/si* ___ *no*

12. *(6-month visit only, if same parent)* How many years of school have you completed? Where? **¿Cuantos años de escuela cumplio usted y en donde?**

Write in: _____ *Where:* _____

Questions for 12-month visit only:

13. Has [child's name] doctor talked with you or your family about reading to [child's name]? **¿Ha hablado el doctor de su niño/a a con usted o con su familia sobre leyendo a su niño/a [name]?**

___ *yes/si* ___ *no*

14. Did the doctor give you good ideas about how to read to [child's name]? **¿Le dio el doctor ideas buenas sobre como leer a su niño/a [name]?**

___ *yes/si* ___*no*

15. Altogether how many books for reading to your child have you received from the doctor or nurse here? **¿En total, cuantos libros ha recibo usted del doctor aquí o de la enfermera aquí para leer a su niño/a?**

Enter number: _____

16. Have you ever seen volunteers reading to children in the waiting room here? **¿Ha visto usted a los voluntarios leyendo a los niños en esta sala do espero?**

___*yes/si* ___ *no—to Q18*

---*17.* Did your child listen to the volunteers reading in the waiting room? **¿Cuañdo los voluntarios leyeron en en esta sala, oyó su niño/a?**

___ *yes/si* ___*no*

18. Do you have any comments to share about your experience with the Reach Out and Read program. **¿Puede usted comentar sobre sus experiences con el programa de Reach Out and Read?**

RORA Site: ROR _____ Control _____ Child's Age Group _____ ID number _____
Parent: language used _____ Child: language used _____ Interview completed _____ PLS-4 completed _____

Background questions about this child: Today's date: _____

a) Informant: (not parent/guardian, stop) □*mother* □*father* □*guardian*
b) Child's DOB: _____
c) No. of well-child visits here (ROR site—not counting today): _____
d) Child: □*male* □*female*
e) Ethnicity: □*Hispanic/Latino* □*Not Hispanic*
f) Race (all that apply): □*African Am/Black* □*Asian* □*White* □*Other*
g) Birth Wt. _____ ___ <1500 g (<3lb-5oz) ___1500 to <2500 g (3lb-5oz to <5lb-8oz) ___ ≥2500 g (5lb-8oz or more)

Data Summary

Descriptive Statistics:

Variable	N	Minimum	Maximum	Mean	Std. Deviation
6-month auditory comprehension - standard score	23	67.00	111.00	90.1739	12.98129
6-month expressive communication - standard score	23	80.00	94.00	86.1304	5.46314
6-month total language score - standard score	23	75.00	101.00	87.0000	7.67523
6-month auditory comprehension - percentile rank	23	1.00	77.00	31.4783	25.05969
6-month expressive communication - percentile rank	23	9.00	34.00	19.0870	9.41910
6-month total language score - percentile rank	23	5.00	53.00	21.9565	13.93321
12-month auditory comprehension - standard score	23	81.00	99.00	92.0435	5.26980
12-month expressive communication - standard score	23	76.00	99.00	85.8696	6.30515
12-month total language score - standard score	23	80.00	98.00	87.9565	5.53894
12-month auditory comprehension - percentile rank	23	10.00	47.00	30.6522	11.91870
12-month expressive communication - percentile rank	23	5.00	47.00	18.9565	11.54626
12-month total language score - percentile rank	23	9.00	45.00	22.5217	11.18794
Q5: 6-month - Number of books altogether you have read to your child at home	23	.00	20.00	4.4348	5.40056
Q6: 6-month - Number of days each week you read children's books to your child	23	.00	7.00	2.1739	2.30912
Q12a: 6-month - Number of years of school you completed	23	3.00	12.00	7.9130	2.98349
Q5: 12-month - Number of books altogether you have read to your child at home	23	.00	30.00	7.7391	7.77652

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Q6: 12-month - Number of days each week you read children's books to your child	23	.00	7.00	3.0435	2.01084
Q15: 12-month - Altogether how many books for reading to your child have you received from the doctor or nurse here	23	.00	7.00	1.4348	1.72748
6-month - Number of visits	23	.00	3.00	1.4783	1.41001
12-month - Number of visits	23	.00	5.00	2.4348	2.14955
Number ROR visits	23	.00	2.00	.9565	.87792
Valid N (listwise)	23				

Frequency Tables:

Group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Treatment (ROR)	14	60.9	60.9	60.9
	Control	9	39.1	39.1	100.0
	Total	23	100.0	100.0	

Parent & Child Language Used

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	5	21.7	21.7	21.7
	Spanish	18	78.3	78.3	100.0
	Total	23	100.0	100.0	

Q1: 6-month - Three favorite things

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	19	82.6	82.6	82.6
	Yes	4	17.4	17.4	100.0
	Total	23	100.0	100.0	

Q2: 6-month - Prepare for sleep at night

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	23	100.0	100.0	100.0

Q3: 6-month - Help him/her be successful in kindergarten

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	69.6	69.6	69.6
	Yes	7	30.4	30.4	100.0
	Total	23	100.0	100.0	

Q4a: 6-month - Read children's books to your child

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	39.1	39.1	39.1
	Yes	14	60.9	60.9	100.0
	Total	23	100.0	100.0	

Q4b: 6-month - Your child too young to be read to

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	69.6	69.6	69.6
	Yes	7	30.4	30.4	100.0
	Total	23	100.0	100.0	

Q7a: 6-month - Have used or read books in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	34.8	34.8	34.8
	Yes	15	65.2	65.2	100.0
	Total	23	100.0	100.0	

Q7b: 6-month - Have used or read magazines in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	13	56.5	56.5	56.5
	Yes	10	43.5	43.5	100.0
	Total	23	100.0	100.0	

Q7c: 6-month - Have used or read newspapers in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	13	56.5	56.5	56.5
	Yes	10	43.5	43.5	100.0
	Total	23	100.0	100.0	

Q7d: 6-month - Have used paper and pen in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	30.4	30.4	30.4
	Yes	16	69.6	69.6	100.0
	Total	23	100.0	100.0	

Q8: Languages are spoken in (by) your home/family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	English	1	4.3	4.3	4.3
	Spanish	17	73.9	73.9	78.3
	Bilingual	5	21.7	21.7	100.0
	Total	23	100.0	100.0	

Q12b: 6-month - Where you completed school

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Texas	6	26.1	26.1	26.1
	Mexico	17	73.9	73.9	100.0
	Total	23	100.0	100.0	

Q1: 12-month - Three favorite things

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	16	69.6	69.6	69.6
	Yes	7	30.4	30.4	100.0
	Total	23	100.0	100.0	

Q2: 12-month - Prepare for sleep at night

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	65.2	65.2	65.2
	Yes	8	34.8	34.8	100.0
	Total	23	100.0	100.0	

Q3: 12-month - Help him/her be successful in kindergarten

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	8	34.8	34.8	34.8
	Yes	15	65.2	65.2	100.0
	Total	23	100.0	100.0	

Q4a: 12-month - Read children's books to your child

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	8.7	8.7	8.7
	Yes	21	91.3	91.3	100.0
	Total	23	100.0	100.0	

Q4b: 12-month - Your child too young to be read to

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	22	95.7	95.7	95.7
	Yes	1	4.3	4.3	100.0
	Total	23	100.0	100.0	

Q7a: 12-month - Have used or read books in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	17.4	17.4	17.4
	Yes	19	82.6	82.6	100.0
	Total	23	100.0	100.0	

Q7b: 12-month - Have used or read magazines in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	14	60.9	60.9	60.9
	Yes	9	39.1	39.1	100.0
	Total	23	100.0	100.0	

Q7c: 12-month - Have used or read newspapers in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	43.5	43.5	43.5
	Yes	13	56.5	56.5	100.0
	Total	23	100.0	100.0	

Q7d: 12-month - Have used paper and pen in your home during the last week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	7	30.4	30.4	30.4
	Yes	16	69.6	69.6	100.0
	Total	23	100.0	100.0	

Q13: 12-month - Has your child's doctor talked with you or your family about reading to your child

	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	No	8	34.8	34.8	34.8
	Yes	15	65.2	65.2	100.0
	Total	23	100.0	100.0	

Q14: 12-month - Did the doctor give you good ideas about how to read to your child

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	10	43.5	43.5	43.5
	Yes	13	56.5	56.5	100.0
	Total	23	100.0	100.0	

Q16: 12-month - Have you ever seen volunteers reading to children in the waiting room here

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	15	65.2	65.2	65.2
	Yes	8	34.8	34.8	100.0
	Total	23	100.0	100.0	

Q17: 12-month - Did your child listen to the volunteers reading in the waiting room

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	78.3	78.3	78.3
	Yes	5	21.7	21.7	100.0
	Total	23	100.0	100.0	

Family Literacy—Short Survey *(FL-SS)*

ID_____ Age of Child_____ Date_____ Language/s_____

These questions are to be answered by a child's parent or guardian.

read/yes no

____1 ____0 1. Is there anything you do with your child that will help him/her be successful when he/she goes to kindergarten? (prompt for 3)
¿Qué es lo que hace usted ahorita para preparar a su niño/a para el grado kinder?

____1 ____0 2. Do you ever read to [name]?
¿Usted lee libros de niños a [name]?

____# 3. How many children's books altogether do you have at home that you read to [name]?
¿Cuántos libros tiene en su hogar para leer a [name]?

____# 4. How many days each week do you read to your child?
¿Cuántos días de la semana lee usted a su niño/a?

____1 ____0 5. Do other adults or older children read to, sing to, or tell stories to your child?
¿Los otros adultos (o otros niños) que viven en su casa, leen, cantan o cuentan historias a su niño/a?

6. Which of the following have you used or read in your home during the last week?
¿Durante la semana pasada, cuáles de los siguiente articulos ha leido usted?

___1 magazines/periodicos
___1 newspapers/revistas
___1 books/libros

____1 ____0 7. Has your child's doctor talked with you or your family about reading to your child?
¿Ha hablado el doctor de su niño/a a con usted o con su familia sobre leyendo a su niño/a?

____1 ____0 8. Did the doctor give you good ideas about how to read to your child?
¿Le dio el doctor ideas buenas sobre como leer a su niño/a?

____# 9. Altogether how many books for reading to your child have you received from the doctor or nurse here?
¿En total, cuantos libros ha recibo usted del doctor aquí o de la enfermera aquí para leer a su niño/a?

____1 ____0 10. Have you ever seen volunteers reading to children in the waiting room here?
¿Ha visto usted a los voluntarios leyendo a los niños en esta sala do espero?

____1 ____0 11. Did your child listen to the volunteers reading in the waiting room?
¿Cuañdo los voluntarios leyeron en en esta sala, oyó su niño/a?

____1 ____0 12. Have you used the reading corner in the waiting room to read to your child?
¿Usted ha usado el rincon the leer que esta en la sala de espera para leer le a su niño/a?

Gramann, Jacqueline (2007). *Family Literacy—Short Survey (FL-SS).*
Texas Center for the Advancement of Literacy & Learning: College Station, TX.