

Improving Adherence to Reach Out and Read: A Bookmark Intervention

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ABSTRACT

This study examines how the addition of a modest addendum to the well-established pediatric primary care program, Reach Out and Read (ROR), is associated with increased clinician adherence to ROR and caregiver home literacy behavior. This study took place in four ambulatory care clinics at a large urban medical center. All clinics received standard ROR training. Two of the four clinics received additional ROR training and bookmarks with age-specific advice about reading aloud with children. Following the intervention, medical providers reported no behavioral differences, however caregivers in the intervention group reported: more frequent trips to the library, receiving more books from their pediatrician, and receiving more advice on how to read with their child than caregivers in from the comparison clinics. Thus the addition of a modest training and bookmark intervention to the ROR program was associated with caregiver report of both increased clinician adherence to ROR and increased caregiver literacy behavior. The bookmark intervention may be an inexpensive way to improve the effects of the ROR program.

Introduction

Socioeconomic status (SES) is strongly associated with children's academic achievement and language development¹, with disparities in language abilities appearing as early as 15 months² and persisting throughout the lifespan³. The home literacy environment, including caregiver literacy behaviors and availability of books and reading materials, may be a mediator through which SES affects children's language development⁴⁻⁶.

A number of interventions have aimed to improve home literacy environments of economically disadvantaged families and assist parents in engaging in reading activities with their children⁷⁻⁹, but many of these programs involve home-visiting, which can be labor-intensive and expensive, or in-school programs, which are not available in early childhood. The pediatric primary care setting, however, is a potentially effective, convenient, and inexpensive platform through which to implement early childhood intervention^{10,11}. Eighty-six percent of children under five years old have seen a health care professional in the last six months¹². Thus, pediatric clinics offer a location to which children and parents are coming often and early in life.

The current intervention is an extension of the well-established pediatric primary care program, Reach Out and Read (ROR)¹³. The ROR program has three main components: 1) literacy-rich waiting rooms with volunteers who read aloud to children, thereby modeling

Table 2. Caregiver responses to questions regarding ROR experience and literacy activities.

		Comparison Group (N)	Intervention Group (N)	χ ²	p
How many books have you received from your pediatrician?	None	10	8	9.51	0.01
	1-3 books	32	15		
	More than 3 books	48	67		
How often did your pediatrician counsel you about how to read with your child at well-child visits after your child turned 6 months?	Never	32	11	16.82	<0.01
	Rarely	9	8		
	Sometimes	14	12		
	Usually	8	11		
	Always	27	48		
If you have a library card, how often do you go to the library on average?	Do not have a library card	46	42	0.71	0.01
	Never	12	3		
	Once a month	18	30		
	Once a week	10	14		
	More than once a week	4	1		
Have you and your child read together during the previous 24 hours?	Yes	62	48	4.58	0.03
	No	28	42		

Table 3. Provider responses to questions regarding ROR adherence and comfort.

		Comparison Group (N)	Intervention Group (N)
How often do you remember to distribute Reach Out and Read Books at your well-child visits?	Never	0	0
	Rarely	0	0
	Sometimes	9	2
	Usually	36	21
	Always	11	31
How often do you give parents developmentally appropriate counseling regarding reading?	Never	0	0
	Rarely	10	3
	Sometimes	30	17
	Usually	14	25
	Always	2	9
How comfortable do you feel giving parents developmentally appropriate counseling regarding reading?	Uncomfortable	3	5
	Somewhat uncomfortable	12	1
	Somewhat comfortable	25	18
	Mostly comfortable	12	22
	Completely comfortable	4	8
How often do you model reading techniques with families?	Never	19	3
	Rarely	18	10
	Sometimes	15	31
	Usually	4	8
	Always	0	2

Note: All provider results were not significant.

well-visits at which they gave out a book. It is possible that the training made the ROR program a more salient aspect of their job at the clinic and therefore they remembered to give a book as part of every well-child visit. It is also possible that because the training included background on the scientific evidence for ROR, it increased clinician buy-in to the program, which in turn increased adherence.

It is interesting to note that, although parents in the intervention group reported receiving books more

frequently, no significant differences were found following the intervention in clinician-report of book distribution, although trends suggested that clinicians in intervention clinics reported more compliance with ROR protocols. Previous studies have also reported discrepancies between caregiver-report, clinician-report, and clinic-report of the number of books that families have received²³. One possible interpretation is that parents may provide less reliable reports than providers. However, we note that caregivers

were asked to quantify the actual number of books received from their pediatrician, whereas clinicians were asked, "How often do you remember to distribute Reach Out and Read books at your well-child visits between 6 months and 5 years?" with possible responses being a Likert-type scale ranging from "Always" to "Never." It is therefore possible that, because parents were asked to report a specific number of books, their reports may have been more accurate than the qualitative estimates of the providers. The memory for particular books may be more tangible than the estimate of how often books were distributed. In many ROR clinics, clinicians include whether a book was given in the official medical record. Future studies should consider collecting medical records, in addition to parent and clinician report, to more accurately track book distribution.

In addition to reporting having received more books, caregiver in the intervention clinics reported receiving more counseling about reading with their child from the pediatrician than caregivers at the comparison clinics. The bookmarks themselves had information about how to read with children of different ages. It is possible that the bookmarks served as physical reminders to the clinicians to provide anticipatory guidance and perhaps even as aids to clinicians who did not remember age-appropriate tips for reading. It is also possible that both the additional training and the bookmark together improved anticipatory guidance outcomes and future research is needed to parse out their independent effects.

Finally, caregivers at intervention clinics reported more frequent trips to the library than caregivers at control clinics. This result may be the most notable as it relates directly the child's literacy environment. It indicates that increased book distribution and anticipatory guidance may positively affect the literacy-related activities that caregivers engage in with their children.

These preliminary results suggest that the addition of the bookmark intervention to the established ROR program may increase clinician adherence to ROR, which in turn may increase caregivers' participation in literacy-related activities. However, the study has several limitations. It was not longitudinal within individuals, which limits our ability to draw conclusions about the causative associations amongst the bookmark intervention, adherence to ROR protocols, and home literacy outcomes. Additionally, we collected post-intervention data at only one time point, 9 months after the implemented of the intervention, therefore we were unable to test how soon after implementation increased adherence and home literacy behaviors began. Future studies should seek to determine how quickly the bookmark intervention improves these outcomes. Furthermore, our data consist entirely of self-report measures. The use of more objective data sources in future studies, such as clinical records of book distribution, could

improve reliability and validity. Finally, the small number of clinics limits the generalizability of our results. In the future we hope to study the effects of the bookmark addendum to ROR on a larger scale. Despite these limitations, our results suggest that the addition of an inexpensive add-on to the typical ROR program – in the form of an informational bookmark for parents and brief additional training for providers – could have positive impacts on clinician and caregiver literacy behavior.

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Conflict of Interest statement

The authors have no potential conflicts of interest and no corporate sponsors.

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