Reach Out and Read Program: Incorporating Early Literacy Promotion into Practice

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Reach Out and Read Program:
Incorporating Early Literacy Promotion
into Practice

BY
Melanie Miller

A paper submitted in partial fulfillment of the requirements for the degree
Doctor of Nursing Practice
South Dakota State University
2017
Reach Out and Read Program:

Incorporating Early Literacy Promotion

Into Practice

This Doctor of Nursing Practice (DNP) Project is approved as a credible and independent investigation by a candidate for the DNP degree and is acceptable for meeting the project requirements for this degree. Acceptance of this DNP Project does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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Abstract

Reach Out and Read Program:
Incorporating Early Literacy Promotion Into Practice

**Purpose:** The purpose of this project was to increase the number of days per week parents read to their children ages six months to five years in order to increase literacy, brain and language development, and improve parent-child relationships and health outcomes.

**Review of Literature:** Between birth and age five, 90% of a child’s brain development occurs (Theriot et al., 2003). The Reach Out and Read© program is an evidence-based program incorporating books into well-child visits by primary care providers ages 6 months to 5 years (Reach Out and Read©, 2014). After being introduced to literacy programs, frequency of shared book reading increased by parents to children (Kumar et al, 2016). Children of parents who read books consistently to their children were found to have higher receptive and expressive vocabulary, greater parent-child relationships, higher cognitive and language development, and greater school readiness (AAP, 2014; Kumar et al., 2014). Individuals with lower health literacy more often were found to have poorer health status, unhealthy behaviors, less utilization of preventative services, higher rates of chronic disease, increased healthcare costs, and eventually poorer health outcomes (Miller, Lee, DeWalt, & Vann, Jr, 2014).

**Summary of the Project:** This project took place at a rural Midwestern primary care clinic which serves patients over their lifespan, primarily Caucasian, English-speaking, and low to middle socioeconomic class. Clinic nurses administered demographic and pre-questionnaires to parents of children 6 months to 5 years of age attending well-child visits assessing at home shared book frequency and attitudes toward book reading. Primary care providers gave a developmentally appropriate book to the child upon entering the well child visit and provided education and guidance to the parent regarding early literacy interventions and anticipatory guidance. Two-months after the visit, a post-questionnaire was mailed or emailed to the parent assessing frequency of reading and attitudes toward book reading.

**Expected Findings:** After introduction to the Reach Out and Read© program, shared book frequency was increased, attitudes toward book reading was enhanced, and literacy outcomes and vocabulary was enhanced through statistical evaluation using paired t-tests.

**Implications for NPs:** This project proves literacy promotion can greatly impact parents and their children. Primary care providers should encourage reading at least three times a week starting at 6 months of age. By encouraging at home shared book reading and educating parents on the importance of starting early, children can thrive through substantial educational and health outcomes.

**Keywords:** Reach Out and Read© program, shared book reading, literacy, primary care providers, education outcomes, health outcomes
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List of Abbreviations

AAP – American Association of Pediatrics
CEO – Chief Executive Officer
DNP – Doctor of Nursing Practice
GDP – Gross Domestic Product
HPM—Health Promotion Model
IR – Interest in Reading
JHNEBP—John Hopkins Nursing Evidence Based Practice
NAPNAP – National Association of Pediatric Nurse Practitioners
NCCP – National Center for Children in Poverty
ROR – Reach Out and Read
TPW – Time per week spent reading to the child
TSR – Time spent reading per occasion
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Chapter 1:
Introduction

Childhood development can be impacted greatly by parental influence. When children are read to regularly, brain development, language, literacy, and social-emotional skills can be stimulated (American Academy of Pediatrics, 2014). The age at which parents begin reading to their children is correlated with their child’s language development, indicating children who are read to at an early age tend to have higher scores on language measures later on in life (Duursema, Augustyn, & Zuckerman, 2008). Along with development, parent-child relationships are enhanced through shared reading activities. The positive attitudes parents have toward shared reading can enhance their child’s attitude and feelings toward reading.

During shared book reading, children begin developing language skills and literacy. At an early age, children start to recognize letters and understand that print represents the spoken word (Duursema et al., 2008). As they grow older, children learn how to hold the book and turn the page. Shared book reading helps children develop skills associated with print concepts, language register, story structures, and can stimulate verbal communication and language development. Through early introduction to books and reading, children develop early literacy skills, which will help them build a strong foundation toward language and education.

Significance of the Problem

Between birth and age five years of age, 90% of a child’s brain development occurs (Theriot et al., 2003). Before three years of age, children from educated families
typically have heard approximately 30 million more words than those from low-income and undereducated families (Fahey & Forman, 2012). Every year, more than one-third of American children start kindergarten without adequate language skills needed to begin reading, and approximately 80% of children living below the poverty threshold fail to develop reading proficiency by the end of third grade (AAP, 2014). Children of low-income families have fewer resources and are less likely to read regularly, which may result in learning disadvantages, childhood adversity, and stress at an early age (AAP, 2014).

In the 1980s, studies found parents were not reading to their children, for reasons such as a lack of children’s bookstores and reading experience, the high cost of books, and a reported non-pleasurable experience for the parents (Zuckerman, 2009). Approximately half of parents reported reading to their children daily, with 36% of those being of low-income and 59% of upper-income status (Russ et al., 2007). Since nearly 35% of children are living in disadvantaged areas, it is important to provide books to those who have less resources and books available (National Center of Children in Poverty, 2013).

According to the National Assessment of Adult Literacy (NAAL) survey, nearly half of all adults were unable to correctly use available print materials provided in everyday life (Miller, Lee, DeWalt, & Vann, Jr., 2010). The survey found a high correlation between literacy and health literacy, resulting in the inability to obtain, process and understand health information and services needed to make health decisions. Among individuals with lower health literacy, they more often had poorer health status, unhealthy behaviors, less utilization of preventative services, higher rates of chronic...
disease, increased healthcare costs, and eventually poorer health outcomes (Miller, Lee, DeWalt, & Vann, Jr, 2014).

Nearly 90% of children see a primary care provider at least annually for checkups (Reach Out and Read©, 2014). When primary care providers combine encouragement and direction, comprehension on the importance of reading by parents may be impacted. Parents may be substantially influenced by primary care providers through knowledge and expertise to perform regular reading with their child. Along with improved understanding of early literacy for children by parents, primary care providers and families may experience heightened rapport and trust with a holistic approach to the child’s well being.

Promoting early childhood literacy is an initiative throughout many states and countries. Former President Barack Obama recognized the need to expand access to high quality childhood education and supports a continuum of early learning opportunities beginning at birth through five years of age (White House, 2016). Many communities are partaking in implementing and reforming childhood programs through numerous programs and grants offered to help more children gain access to early education (White House, 2016). Various school and community programs have been implemented and expanded to involve low-income, rural, and disadvantaged children. The Reach Out and Read© program, along with these programs, involves primary care providers as essential assets to educate and encourage parents to being reading books at early ages (Reach Out and Read©, 2014). As trusted and knowledgeable resources to children and parents, primary care providers can have an enormous impact on childhood literacy and at home learning prior to beginning preschool and learning programs.
Reach Out and Read\textsuperscript{©} is a non-profit organization with evidence-based intervention results regarding increasing literacy skills amongst children (Reach Out and Read\textsuperscript{©}, 2014). The program incorporates books into well-child visits by primary care providers giving developmentally appropriate books to each child and encouraging parents to read aloud with their children. When parents read aloud with their children, they can build a foundation for their child by promoting early literacy skills. Primary care providers will form relationships with parents and children by providing a basis of tools and knowledge to help prepare these children for school.

Beginning at the six-month well-child appointment, primary care providers give a book to each child, along with education pertaining to anticipatory literacy needs to parents. The primary care provider will continue to provide books at each well-child visit through five years of age. If the child continues to attend each well-child visit from six months to five years of age, the child will enter kindergarten with at least 10 books. The program currently aids one out of every five children living in poverty in this country. Overall, the program serves approximately 4.5 million children in the United States with close to 6.5 million books distributed in over 14 different languages (Reach Out and Read\textsuperscript{©}, 2014).

Reach Out and Read\textsuperscript{©} has proven to have a positive impact for children as the program has been endorsed the American Academy of Pediatrics and National Association of Pediatric Nurse Practitioners (AAP, 2014; NAPNP, 2015). According to the American Academy of Pediatrics’ policy statement, reading aloud to children is one of the most effective ways to encourage literacy skills needed for school readiness and enriched language skills (AAP, 2014). The Reach Out and Read\textsuperscript{©} program helps children
develop early language skills, cultivates positive associations with books and reading, and builds stronger foundations for education (Reach Out and Read©, 2014). Children in preschool score three to six months ahead on vocabulary tests when enrolled in the program compared to those who are not enrolled. When entering kindergarten, children who have completed the program tend to have larger vocabularies and stronger language skills (AAP, 2014).

**Population of Interest**

The population of interest for this Doctor of Nursing Practice (DNP) project is parents of children six months to five years of age who bring their children to well-child visits in a rural Midwestern primary clinic. The clinic serves primarily Caucasian and English speaking families (K. Monson, personal communication, June 28, 2016). Due to geographic location and available resources in the area, the population is classified as disadvantaged and underserved (U.S. Department of Health and Human Services, 2016).

**Clinical Question**

To further evaluate the effectiveness of certain interventions, a PICOT question has been formulated as guidance with universal implications to all health care providers. The universal understanding can increase research literacy and capacity amongst healthcare providers (Fineout-Overholt & Stillwell, 2015). The P refers to population, or the sample of subjects in which are used in the study. The I discusses the intervention, or the treatment that will be given to the subjects in the study. The C considers the comparison and identifies the reference group to which the intervention group will be compared. The O refers to outcome, or what result is being measured to examine the effectiveness of the intervention. Finally, the T indicates the time, or duration in which
the data collection will take place. Clinicians and researchers can create greater understanding by offering common language of research question frameworks.

For this DNP project, the PICOT question is: (P) In parents of children ages six months to five years of age utilizing a rural Midwestern primary care clinic, does (I) implementation of the Reach Out and Read© program increase (C) the number of days per week parents read to their child compared (O) to the number of days per week that parents read to their child prior to program introduction (T) after two months?

**Purpose of the Project**

The purpose of this project was to determine if the Reach Out and Read© program increases the number of days per week parents read to their children ages six months to five years of age. Evidence has supported a correlation between the introduction of the Reach Out and Read© program and increased shared reading frequency, number of books in the home, and reports of reading as a favorite activity (Gramann, 2007; Jones et al., 2015; Kumar et al., 2016; Needleman, Toker, Dreyer, Klass, & Mendelsohn, 2005; Sanders, Gershon, Huffman, Mendoza, 2000; Zuckerman, 2009). When primary care providers and clinic nurses took time to provide books and advice to families, parents were more likely to express respect and appreciation toward staff as well (Ortiz & Buchi, 2008).

The Reach Out and Read© program increases the frequency children are read to by their parents by encouraging parents to being reading at an early age (Reach Out and Read©, 2014). Combining efficient implementation and promotion of the program can influence many children by increasing literacy, brain and language development, and improve parent-child relationships and health outcomes.
Definitions

Disadvantaged- A disadvantaged individual refers to one who comes from an environment that has inhibited the individual from obtaining knowledge, skill and abilities, or comes from a family with an annual income below a level based on low income thresholds by the U.S. Bureau of Census (U.S. Department of Health and Human Services, 2016).

Health literacy- Health literacy is the degree to which an individual has the capacity to obtain, communicate, process, and understand the basic health information and services to make appropriate health decisions (Centers for Disease Control and Prevention, 2016).

Literacy- Literacy is the ability to read and write, and the knowledge that relates to a specified subject (Merriam-Webster, 2016).

Low-income- An individual whose family’s taxable income for the preceding year did not exceed 150 percent of the poverty level amount. Low-income family of four as of January 2016 is $36,450 (U. S. Department of Education, 2016).

Rural- Rural is defined as any group of people within a specified area of less than 2,500 people (U.S. Census Bureau, 2015). It encompasses all the population, housing, and territory not included within the urban areas.

Shared book reading- Also known as interactive shared book reading, shared book reading uses practices, such as structured interactive techniques to engage the children into the text, to enhance young children’s language and literacy skills (Institute of Educational Sciences, 2015).

Underserved- An underserved population refers to one being inadequately provided with a service or facility (Oxford Dictionaries, 2016).
Chapter 2: 

Literature Review

Introduction

The review of literature consisted of numerous random control trials and quasi-experimental studies concerning early childhood literacy through book reading. Research was conducted utilizing CINAHL and Science Direct for research 2000-present in the English language. Search terms used were books, children, early literacy, health, literacy, parents, outcomes, reading aloud and Reach Out and Read. Best evidence was narrowed down focusing on systematic reviews, meta-analysis, and clinical practice guidelines. The total number of articles found were 175 and were narrowed down to 15.

Utilizing the John Hopkins Nursing Evidence-Based Practice (JHNEBP) model to translate evidence and research, the best practice studies and findings were included to support this project. Specific searches in rural areas were attempted and mostly unsuccessful. Due to many early fundamental and important studies, research articles were used dating back to 2000. Articles containing outcomes directly related to book reading frequency, Reach Out and Read© programs, clinical practice guidelines related to early childhood literacy, childhood outcomes related to book reading, articles in English language, and various foreign studies were included in this project. Excluded articles included those of foreign language, articles earlier than 2000 and articles concerning childhood literacy outcomes not related to book reading. See Appendix G for database searches and findings.

The literature was appraised using the JHNEBP model, which categorized articles in five levels, with each level ranking high, good, or low quality (Dearholt, 2012). The
strength of research placed articles in a level, and quality is ranked high, good, or low. Level I consisted of experimental studies, randomized controlled trials and systematic reviews of randomized controlled trials, with or without meta-analysis. Level II involved quasi-experimental studies or systematic reviews of a combination of randomized controlled trials and quasi-experimental studies, with or without meta-analysis. Level III comprised non-experimental studies, systematic reviews of a combination of randomized controlled trials and quasi-experimental studies, quasi-experimental and non-experimental studies only with or without meta-analysis, or qualitative studies or systematic reviews, with or without meta-analysis. Level IV included opinions of respected authorities or nationally recognized expert committees, based on scientific evidence and may include clinical practice guidelines and consensus panels. Level V consisted of experimental and non-research evidence, which may include literature reviews, quality improvement programs, case reports and expert opinions. Overall, there were four Level I, seven Level II, one Level III, one Level IV, and one Level V articles found.

The levels were further ranked according to quality: high, good, or low (A-C). High quality (A) ranking included consistent and generalizable results with sufficient sample size, adequate control, and definitive conclusions that are consistent with recommendations based on literature review. Good quality (B) ranking included reasonably consistent results with sufficient sample size, some control, and fairly definitive conclusions that are reasonably consistent with recommendations based on literature review. Low quality (C) ranking included little evidence with inconsistent results, insufficient sample size, and no final conclusions being drawn from the study.
(Dearholt, 2012). Overall, there were ten high quality (A), five good quality (B), and zero low quality (C) articles found.

The policy statement was appraised using the AGREE-II tool to evaluate methodological rigor and transparency of the statement (Brouwers et al., 2010). The tool assessed six domains and an overall guideline assessment. The six quality domains consisted of assessing the scope and practice of the policy, stakeholder involvement, rigor of development, clarity of presentation, applicability to practice, and editorial independence. Overall, the six domains consisted of 23 items aimed at assessing policy quality, validity and reliability. The AGREE -II tool is targeted to assess clinical practice guidelines, which include greater detail into future research, rigor, key stakeholders and on-going assessment. The American Academy of Pediatric policy statement was chosen due to its high evidence-based background and implications available for practice. The policy grade using the AGREE -II tool to assess quality was found to be 65%. Although not as high as anticipated, the quality of the policy is still considered high and the decision to use in practice is reasonable.

Evidence Findings

Early childhood literacy. In children ages six months to five years of age, early childhood literacy has been shown to have greater outcomes when parents consistently read books to their children (Gramann, 2007; High, LaGasse, Becker, Ahlgren, & Gardner, 2000; AAP, 2014; Kumar, Cowan, Erdman, Kaufman, & Hick, 2016; Lonigan, Shnahan, & Cunningham, 2008; Jones et al., 2015; Kalb & van Ours, 2014; Mol, 2011; Needleman et al., 2005; Peifer & Perez, 2011; Riken et al., 2015; Sanders et al., 2000; Zuckerman, 2009). Children were found to have higher receptive and expressive
vocabulary, greater parent-child relationships, higher cognitive and language
development, and greater school readiness and anticipatory guidance after evaluating
children’s outcomes following early implementation of reading programs (Graman, 2007;
High et al., 2000; Jones et al., 2015; Kalb & van Ours, 2014; Lonigan et al., 2008;
Needleman et al., 2005; Sanders et al., 2000; Zuckerman, 2009).

AAP announced a policy statement encouraging parents of children to begin early
literacy interventions (AAP, 2014). The statement recommended primary care providers
promote early literacy development beginning in infancy and continuing through
kindergarten. Recommendations of the statement were as follows: advised parents to
read aloud, counseled parents to participate in developmental shared reading activities,
provided developmentally appropriate books for all children at health supervision visits,
and partner with other child advocates to influence policies supporting shared reading
experiences. Interventions were are used to enhance parent-child relationships, prepare
children to learn language skills, boost enjoyable exposure to books, offer language-rich
exposure, provide books to high-risk and low-income children, and offer support to
parents (AAP, 2014). The Reach Out and Read© program was recognized and supported
by AAP as having positive impacts on children, parents, and significant outcomes.

One quasi-experimental study evaluated the effectiveness of interventions
completed by primary care providers during well-child visits in low-income multicultural
families (High et al., 2000). Families read more days during the week after receiving
books when compared to the control group at an average of 4.3 days versus 3.8 days.
Language skills and receptive and expressive vocabulary scores were also higher.
Anticipatory Guidance. Primary care providers serve to support parents with age-appropriate anticipatory guidance on health and literacy promotion (Kuo, Frick, & Minkovitz, 2011). Injury reduction, obesity awareness, and parental general knowledge have been improved after effective guidance and support to parents. To provide a foundation for optimal learning, primary care providers provide advice regarding reciprocal and respectful communication with adults and children during well-child visits, identify developmental problems and appropriate referrals for services and promote language-rich activities (AAP, 2016). Primary care providers teach value in using books for identification of words, numbers, colors and objects, as well as the spoken word on brain development and cognition. They play a dynamic role in the foundation of early brain development and learning in children by providing guidance to parents.

Higher literacy and shared reading interventions. Evidence was found promoting shared reading interventions after comprehensive evaluation of multiple random controlled trials (Kumar et al., 2016; Lonigan, Shanahan, & Cunningham, 2008; Kalb & van Ours, 2014; Mol, 2011). Mothers of children introduced to the Reach Out and Read© program were seven times more likely to report reading as one of their child’s favorite activity. In addition, frequency of book reading weekly increased by 1.2 days over the study period (Kumar et al., 2016). A meta-analysis conducted in the United States and Australia, determined shared reading positively impacted literacy and language skills and increased frequency of book reading per month. In Australia, findings also concluded the number of books at home positively impacted literacy outcomes and frequency of shared book reading at home (Kalb & van Ours, 2014). A
meta-analysis of 27 randomized controlled and quasi-experimental studies found significant and substantial positive impacts on oral and print language skills after shared reading interventions were introduced (Lonigan et al., 2008).

**Book reading frequencies.** Literacy programs that encouraged reading and provided at-home books increased the frequency of shared book reading (Gramann, 2007; High et al., 2000; AAP, 2014; Kumar et al., 2016; Lonigan et al., 2008; Jones et al., 2015; Mol, 2011; Needleman et al., 2005; Peifer & Perez, 2011; Riken et al., 2015; Sanders et al., 2000; Zuckerman, 2009). When provided books and advice concerning shared book reading with children, frequency of book reading increased from 3.8 to 4.3 days a week amongst low-income families (High et al., 2000). After analysis of 27 random control trials or quasi-experimental studies, shared reading interventions were found to have had positive impacts on frequency and interactions in families, with statistical significance regarding print exposure and shared book reading by parents (Lonigan et al., 2008). In a large multicenter study, after introduction of Reach Out and Read© program, average days per week reading aloud increased from 4.4 to 4.7 days with a statistical significance of $p < 0.01$ (Needleman et al., 2005).

**Reach Out and Read©.** The Reach Out and Read© program promotes shared book reading by primary care providers, showing higher language and literacy skills (Gramann, 2007; Jones et al., 2015; Kumar et al., 2016; Needleman et al., 2005; Sanders et al., 2000; Zuckerman, 2009). Research has shown 90% of brain development happens before age 5, which is why frequent book exposure and reading can provide remarkable outcomes (Theriot et al., 2003). Children scored 8.6 points higher in receptive language and 4.3 points higher in expressive language compared to those not enrolled in the
program (Zuckerman, 2009). In a large multicenter quasi-experimental study, statistical significance was found after introduction to the program. The greatest significance was found in the average days per week parents read aloud to children. Parents reported an increase in reading aloud as a favorite activity with their child leading to school success as well as reported 58% higher frequency of book reading at home with their child compared to those who did not receive a book (Needleman et al., 2005; Sanders et al., 2000). In a quasi-experimental study (n=72) conducted in the southern part of the United States, 83.6% of parents reported reading and discussing books to be very helpful (Jones et al., 2015). In 2016, a randomized control trial found children in the Reach Out and Read© program were 2.5 times more likely to read at least three days per week with a caregiver compared to children not introduced to the program. In addition, the average days per week reading increased by 1.2 over the intervention period (Kumar et al., 2016).

**Evidence Summary (Recommendations for Practice)**

To increase childhood literacy and readiness for school, parents should read to their children at least three times a week. Reach Out and Read© provides parents guidance to assure optimal success for their child in school with easy interventions starting at a young age. There are many initiatives and programs throughout the United States to increase childhood literacy. Preschool programs are being driven by early literacy and educational outcomes, but there is a lack of number of programs before preschool. Positive outcomes can be found with primary care providers being able to impact children and parents at an earlier age. The Reach Out and Read© program can provide children with up to 10 books before starting kindergarten and are encouraged to implement literacy interventions at home (Reach Out and Read©, 2014).
Utilizing JHNEBP model to translate the evidence and research, the following clinical practice guidelines were prepared for use in the evolving DNP project (Dearholt, 2012):

1. Primary care providers should incorporate Reach Out and Read© programs for children six months to five years of age at each well-child visit and discuss the importance of reading (Jones et al., 2015; Kumar et al., 2016; Sanders et al., 2000; Needleman et al., 2005; Zuckerman, 2009).

2. Shared book reading interventions should be encouraged to all parents to increase literacy and child’s learning (High et al., 2000; AAP, 2014; Kumar et al., 2016; Lonigan et al., 2008; Jones et al., 2015; Kalb & van Ours, 2014; Mol, 2011; Needleman et al., 2005; Peifer & Perez, 2011; Riken et al., 2015; Sanders et al., 2000).

3. Primary care providers can influence parent’s frequency of reading aloud to their children by providing books and education related to literacy and education outcomes (High et al., 2000; AAP, 2014; Kumar et al., 2016; Lonigan et al., 2008; Jones et al., 2015; Kalb & van Ours, 2014; Needleman et al., 2005; Sanders et al., 2000).

Gaps in the Evidence

Major limitations and gaps in the evidence included ways to incorporate the education into practice, understanding the effects of various shared reading interventions, valid and reliable measurements of data, and lack of control. Providers should be assessed periodically in the primary care setting to assure adequate implementation and education is provided to each child and parent (AAP, 2014). Although primary care providers are required to undergo training and certification before starting the program,
there is lack of follow-up to evaluate the effectiveness of teaching. Reliability and validity of the data also decreases with parents reporting frequency of reading books at home (AAP, 2014; Jones et al., 2015; Mol, 2011; Peifer & Perez, 2011; Riken et al., 2015; Sanders et al., 2000). When parents self-report reading frequencies, inaccuracy reporting due to image management, introspective abilities and incomplete understanding may occur. Lack of control, due to environmental and personal bias, can affect the data.

This DNP project will provide great insight and evidence for rural and underserved populations. Although there are multiple studies regarding Reach Out and Read© programs, none have been completed in rural, disadvantaged areas. People of rural areas have decreased access to care, decreased ability to purchase childcare, and decreased access to education (Williams, 2011). Areas with greater access to education for children have more advanced cognitive and language development, improved early academic skills, higher levels of school readiness (Crosby, Gennetian, & Huston, 2001; Rigby, Ryan, & Brooks-Gunn, 2007). Since families have less resources and programs available in this area, the Reach Out and Read© program can greatly impact the families and children and help address the narrowed gaps of literacy promotion.

Theoretical Approach

Nola Pender’s Health Promotion Model (HPM) guided the DNP project (Figure A). The model offers a framework for increasing a patient’s level of well-being and how they interact within their environment to pursue optimal health (Pender, Murdaugh, & Parsons, 2015). The three major concepts of the HPM are individual characteristics and experiences, behavior-specific cognitions and affect, and commitment to the plan of
action. The characteristics of each major concept can directly and indirectly impact the likelihood of engaging in health-promoting behavior.

![Figure A](image-url)

**Figure A.** Nola Pender’s Health Promotion Model. Adapted from “Health Promotion in Nursing Practice (7th Ed.),” by N. Pender, C. Murdaugh, and M. Parsons. Copyright 2015 by Pearson. Reprinted with permission.

Personal factors that have been evaluated are ethnicity, socio-economic status, and education (see Figure A). Primary care providers can positively impact personal factors by offering free books and guidance. Direct influence from primary care providers can impact behaviors of the child and parents through education and discussion. Models and brochures in developmental and language appropriate ways can be used by primary care providers to optimize understanding to those with various ethnic or educational backgrounds.

Health-promoting behaviors can be stimulated as primary care providers provide education and encouragement of reading at home to parents. The variables focused to improve health are perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, and situational influences.
(Figure A) (Pender et al., 2015). While providing encouragement, self-efficacy by parents can be impacted with ways to incorporate reading into bedtime or daily routines. The activity-related effect and benefits of action can be understood to help overcome barriers to action through education related to anticipated outcomes. In order to help change behaviors, incorporating the primary sources of interpersonal influences, such as family, peers, and primary care providers, on the health-promoting behaviors will be beneficial (Pender et al., 2015).

The final element of the HPM includes commitment to the program. This acknowledges immediate competing demands and preferences of the program and how each can affect health behavior (Pender et al., 2015). Commitment to the plan solely depends on parental guidance and effort at home. To overcome competing demands, parents must avert from alternative behaviors such as lack of time and last minute urges. If families work together with their primary care providers, positive outcomes and personal fulfillment may be achieved.

Health promoting behavior is the ultimate desired behavioral outcome, resulting in improved health and better quality of life (Pender et al., 2015). As primary care providers, it is vital to promote home literacy interventions, such as reading books, to achieve best literacy outcomes in children. Behavior changes in parents are crucial. Parents will be the ones reading books aloud for children six months to five years of age. In order to achieve desired outcomes in children, the health promoting behavior of reading books at home is essential.
John Hopkins Nursing Evidence-Based Practice Model

The JHNEBP model helps nurses translate evidence and research into clinical, administrative, and educational practice (Dearholt, 2012). The JHNEBP model incorporates research and non-research evidence within the triad of professional nursing practice, which includes education, research, and practice (see Figure B). Internal and external factors influence evidence-based nursing practice by enhancing, or limiting, implementation of recommendations, or interfering with the evidence-based practice process. Internal factors may include culture, environment, equipment, staffing, or standards. External factors may include accreditation, legislation, quality measures, regulation, or standards.

![Figure B. John Hopkins Nursing Evidence-Based Practice Model. Adapted from “John Hopkins nursing evidence-based practice models and guidelines (2nd ed.), by S. Dearholt. Copyright 2014 by Sigma Theta Tau International.](image)

The first step of the model was to create an interprofessional team to help examine specific practice concern (Dearholt, 2012). The interprofessional team was comprised of the project manager, medical manager, and key stakeholders including Chief Executive Officer, clinic manager, nurses, and primary care providers. The
program was reviewed for implementation into clinical practice after identifying the team and obtaining their consent to participate. The second step was to develop and refine the evidence-based practice question. The project manager defined a need for the program, as well as conducted the literature review. The third step defined scope of the question and identifies stakeholders. While updating key stakeholders that have been identified, the program manager continued to refine the evidence-based practice question with proper identification of target population and key outcomes. The fourth step determined responsibilities of project leadership. As identified in the first step, the interprofessional team was given duties to assure sustainability of the project and completion of modules. The modules needed to be completed by primary care providers for implementation of the program. The fifth step included scheduling team meetings. The team meetings were conducted, as needed prior to implementation and quarterly during primary care provider meetings.

The sixth step involved conducting internal and external searches of evidence, which the project manager thoroughly completed prior to implementation of the project. Utilizing the JHNEBP model, the seventh step appraised the level and quality of research. Each research article was appraised and identified appropriately on the evidence table (see Appendix C). The eighth step included summarizing the evidence, which the project manager completed this by using the evidence table and summarizing their findings (see Appendix C). The ninth step incorporated synthesis of the overall strength and quality of evidence. Evidence was reduced to high strength and quality research in the evidence table with guidelines from the JHNEBP model. For the 10th step of evaluation and
identification, the project manager developed recommendations based on the evidence, which is stated above in the Evidence Summary section.

The 11th step included translating evidence by determining appropriateness for change. Prior to implementation of the program and proper consent was given, the risks and benefits were identified by the program manager and presented to key stakeholders. The 12th step involved creation of an action plan. This action plan comprised process pathway, timeline, and feedback from leaders and stakeholders. The 13th step secured support and resources for the action plan, which is accomplished by adequate funding for the books and program. The 14th step included implementation of the program, which was planned for January 2017 after all involved personnel have completed necessary modules and paperwork. The 15th step evaluated the outcomes to determine the impact of the program. This included evaluation of the pre- and post-implementation of program questionnaires. The 16th step comprised reporting outcomes, which was completed using paired t-tests and evaluation of statistical significance. The 17th step involved identification of next steps, which involved evaluating the program and identifying necessary steps for improving the outcomes. The last and final step disseminated the findings, which included reporting results to the organization and community, promoting on-going success of the program (Dearholt, 2012).

**Change Theory**

The change theory guiding this project was Lewin’s Change Theory. Lewin’s Change Theory offered three phases through the development and implementation of change, reducing resistance and fear of participants (see Figure C) (Grossman & Valiga, 2013). The model offered factors that can impede change from occurring, so h ealth care
organizations could understand what behaviors drive or oppose the change in order to strengthen positive driving forces. In order to reinforce success of the DNP project, Lewin’s model was applied to implement the Reach Out and Read© program in the rural Midwestern primary care clinic.

The first stage of the model, or unfreezing stage, involved identifying the change focus of Reach Out and Read© program and prepared for change to take place. Recognition and open communication among key stakeholders was presented with identification of the program. A feeling of empowerment and importance by offering an open communication helped overcome resistance of the project.

Identification of restraining and driving forces was essential after identifying key stakeholders. These included staff resistance, primary care provider resistance, increased workload of primary care providers to educate parents, and financial barriers of the Reach Out and Read© program. Driving forces were better patient outcomes, increased
childhood literacy, and parental satisfaction with primary care providers. It was important to stress the positive driving forces to all stakeholders and participants and diminish restraining forces in the model’s first stage. Lewin encourages open communication, with involvement from all participants in this stage to create a positive innovation (Grossman & Valiga, 2013).

The second stage, also known as the moving stage, included planning and implementation of the DNP project. Planning of the project included primary care provider buy-in and agreement, appropriate funding for the books, identification of storage and up-keep of the books, and well-child visit numbers to project number of books needed. Primary care providers and nurses were oriented to the program, completed an online training module and helped organize books for the program. Implementation included promoting the Reach Out and Read© to the public and implementing the program into practice at the rural health clinic. Support and monitoring of the project through all phases was essential to assure adequate movement and engagement of all primary care providers with the change.

The last and final stage, the refreezing stage, included stabilization and evaluation of the project. To assure stabilization, Lewin emphasizes integration of the change by creating a new culture with the program in practice. Evaluation and feedback was assessed for possible improvement areas throughout the implementation of the program. As guided by Lewin’s theory, stakeholder resistance and fear of change was reduced through active involvement and open communication amongst all primary care providers and parents (Grossman & Valiga, 2013).
Chapter 3:
Method and Procedures

Introduction

This DNP project was designed to promote literacy among rural and underserved children in a rural Midwestern primary care clinic. This chapter discusses implementation phases of the JHNEBP model, ethical considerations, major stakeholders, potential barriers, and project impacts. The project manager prepared the rural Midwestern primary care clinic for implementation of the Reach Out and Read© program and planned procedures and funds for sustainment.

Design/Approach

The design of this project was a non-randomized, quasi-experimental quantitative survey. The project utilized pre- and post- questionnaires administered to a non-randomized sample. Parents of children ages 6 months to 5 years of age attending well-child visits during the data collection time frame of January to February 2017 were asked to participate in the project.

Setting

The project took place in a rural Midwestern primary care clinic. The population of the community was approximately 1,500 people and considered disadvantaged due to rural location with limited resources available (K. Monson, personal communication, June 28, 2016). The organization consisted of a nursing home, assisted living facility, hospital, emergency department, surgery department, and primary care clinic. The project took place in the primary care clinic setting with six primary care providers, consisting of three family physicians, one family nurse practitioner, and two physician
assistants. The providers performing well-child visits saw patients over their lifespan with multiple diagnoses from infancy to geriatrics. On average, the clinic performs approximately 100 well-child visits per year (K. Monson, personal communication, June 28, 2016).

Sample

The sample for this project was a non-randomized convenience sample of parents of children attending six-month to five-year old well-child visits. Children attending the well-child visit without their legal guardian were excluded from the project. Parents who were unable to read, and/or speak English, were also excluded. The population of children six months to five years of age in this primary care clinic were 96% Caucasian, 4% Hispanic, 96% English speaking, 4% Spanish speaking, and primarily low to middle socioeconomic class (K. Monson, personal communication, June 28, 2016). A majority of parents used private insurance for well-child visits (51%), while the remaining were paid by Medicare (44%) and private insurance (5%). The sample size for this project was 10 parents of children six months to five years of age attending well-child visits.

Development of Intervention/Tools

The intervention for this project was the introduction of the Reach Out and Read© program. The program involved partnering primary care providers with families by gifting books and encouraging families to read together (Reach Out and Read©, 2014). The program consisted of one initial interaction amongst the primary care provider, child, and parent. The primary care provider supplied a developmentally appropriate book to the parent and child. They also provided education and reinforcement to the parent concerning reading at home with their child. The primary care providers continued to
provide books, education, and encouragement at every well-child visit for ages six months to five years.

The Reach Out and Read© program supplied the books after funding was secured. The price of one book is $2.75, but the Reach Out and Read© program gifted 10 free books for every $100 funded. Funding of $1000 was provided through a scholarship donation from a community member. On-going support from the community, through personal and corporate donations, will be essential to sustain future funding.

Parents of the children attending well-child visits were asked to complete a demographic questionnaire (see Appendix D), pre-questionnaire (see Appendix E), and post-questionnaire (see Appendix F). The demographic questionnaire assessed the child’s age, sex, ethnicity, and primary language, as well as the parent’s age, sex, ethnicity, primary language, educational level, and insurance type. The pre- and post-questionnaires assessed the frequency of shared book reading parents participated in with their child weekly, time spent reading, number of reading resources available in the home, and the child’s attitudes toward reading.

The project manager used researched literature and validation from other questionnaires to develop questionnaires used in this project. The questionnaires related to resources at home, frequency of reading, attitudes toward reading, and demographics of the child and parents. Ten educated peers were used to assess the questionnaires evaluating validity and reliability of the tool to assure complete parent understanding, and to assure consistent results.
**Project Procedure**

Approval was gained for implementation of the Reach Out and Read© program from the chief executive officer and clinic manager of the organization (see Appendix B) as well as from the project manager’s university Institutional Review Board (see Appendix A). All primary care providers were asked to attend a breakfast, and an introduction and explanation of the Reach Out and Read© program using PowerPoint© and videos were provided by the project manager. Primary care providers completed an on-line training module through the program’s website (see Appendix I). The training included the Reach Out and Read’s© evidence-based program model, research, video clips of providers performing the intervention, book choice, and links for literacy anticipatory guidance to Bright Futures© guidelines (Reach Out and Read©, 2014). Primary care providers received on-going research and education related to literacy outcomes from Reach Out and Read© through email but are not required to complete future modules.

Clinic nurses were educated concerning the Reach Out and Read© program and were given responsibilities for adequate implementation of the program. The nurses were asked to obtain parental consent and gave the pre-questionnaire, chose a developmentally appropriate book for the child, and place the book in the exam’s chart holder outside the clinic room before the primary care provider began the well-child visit. The books were sorted by each well-child age visit and stored in a separate clinic room. Consents and questionnaires were placed in locked cabinets in the clinic and collected by the project manager weekly.
Parents of children ages six months to five years of age who attended well-child visits signed a consent agreeing to participate in this project (see Appendix J and K), and completed a pre-questionnaire to assess the amount of time they read to their child per week. Once the pre-questionnaire was completed, introduction to the Reach Out and Read© program intervention was completed at the first well-child visit. The primary care provider gave a developmentally appropriate book to the child while assessing the child’s interaction with the book, provided education concerning literacy goals and outcomes and encouragement to parents regarding shared book reading in the home environment. To avoid time constraints and ensure adequate understanding, parents and children were also provided brochures discussing the program and evidence-based outcomes.

Two months after the child’s well-child visit, the project manager sent a post-questionnaire to the parents to assess frequency and outcomes via mail or e-mail as specified from the pre-questionnaire (see Appendix F). This two-month time frame provided adequate time for reading routines to be developed and produced a greater number of well-child visits for the project. The main outcome measured for this project was reading frequency, but other questions were asked pertaining to child’s interest in reading and time spent per occasion reading. To improve return rates, an incentive of one free Dairy Queen© ice cream treat was offered by the project manager to parents with the post-questionnaire.

**Ethical Considerations**

Approval was gained for implementation of the Reach Out and Read© program from the chief executive officer and clinic manager of the organization (see Appendix B) as well as from the project manager’s university Institutional Review Board (see
Appendix A). Prior to implementation, the project manager completed Health Insurance Portability and Accountability Act compliance training with the organization’s privacy officer. Questionnaires required participants’ personal information for follow-up questionnaires so questionnaires were securely stored in locked cabinets at the project manager’s home to ensure compliance of confidentiality. During implementation, only clinic nurses and the project manager had access to data. Once nurses completed data collection, questionnaires were placed in a locked cabinet in the clinic. There was minimal risk for participation in the intervention or questionnaires. Participants were allowed to withdraw from the program at anytime without penalties.

The consent for participation of the project included a clear invitation to participate with a description of how the parents were selected. The project purpose and explanation of procedures were explained, and the form stated participation was voluntary and parents were able to withdraw without penalty. Benefits of the project were explained with risks identified.

Projected Analysis

The statistical approach used to analyze project findings was the Wilcoxon signed rank test (paired) to investigate the change in number of times a week a parent reads to their child. The test was appropriate to evaluate the difference after the Reach Out and Read© program intervention when data sets were measured on the nominal scale and projected sample size was small. Analysis included number of days per week a parent read to their child determining how the Reach Out and Read© program affected the shared book reading frequency as well as time spent reading per occasion and child’s interest in reading. Demographic data was also collected including age, sex, ethnicity, language, and payment source. The data was analyzed using frequencies and percentages.
Environmental and Organizational Context

The organization’s mission included providing quality healthcare to all people in a competent and caring manner. The vision relayed an attempt to provide health care services that exceed customer’s expectations. The Reach Out and Read© program offered a holistic manner that will exceed expectations of parents by increasing quality of care through addressing healthcare outcomes and literacy outcomes. The holistic approach to care increased patient satisfaction, as well as built rapport between families and primary care providers.

Stakeholders/Facilitators

The major stakeholders for this project were primary care providers, nurses, the clinic manager, and CEO of the Midwestern rural primary care clinic. The primary care providers were essential because they provided the books and encouraging parents to read to their children starting at six months of age. Other stakeholders included nurses assisting the primary care providers and the clinic manager in organizing the project. The clinic manager was essential for facilitation of the program by providing assistance with the implementation and on-going support to all primary care providers and nurses. The CEO served as primary stakeholder by assuring community marketing is continued for promoting well-child visits for the organization, as well as donations for the program.

Potential Barriers

Potential barriers for facilitation of this project included sustainable funding, incorporation of the program into practice by primary care providers, and possible social desirability bias. Validity and reliability testing posed concern with a possibility of social desirability bias with parents self-reporting reading frequencies. Parents were given
reassurance on confidentiality of the questionnaires, decreasing social desirability bias, and untruthful responses.

Sustainable funding for the program is essential and could become problematic if funds are not available to continue purchasing books. Although funding is promised for the first two years of the program, future funding will be necessary through grants written by the project manager, community assistance, and personal donations. The organization’s marketing coordinator will assist with the publication of the program with hopes of community and personal donations to contribute to the sustainability of the program. Primary care providers may become barriers in the future, due to lack of time, or effort, of implementation of the program into practice. Due to the short period of time for implementation and data collection, educational outcomes are not able to be assessed, but may be considered for future research at the organization.

Organizational Impact

The proposed project had enormous impacts on the children and organization. The organization saw positive impacts with greater satisfaction by parents, as well as greater numbers of well-child visits. As promotion throughout the community, the organization saw higher satisfaction and respect for primary care providers, as educational outcomes were being addressed along with healthcare outcomes. As community members recognize the holistic approach of addressing healthcare and literacy needs, the number of children and families will potentially increase. This increase in patients and families receiving healthcare will create higher patient numbers, higher patient satisfaction scores, and a greater holistic experience for families.
As the number of families attending well-child visits and participating in the program increases, numbers in episodic and other visits may be significantly impacted. If primary care continues to occur at the organization, parents may choose to bring their child to the primary care provider when ill or seeking assistance producing a greater continuance of care as well as increase the number of overall visits.

Financial Impact

The Reach Out and Read© program can financially impact individuals as well as the economy. When investing in early education for disadvantaged children, the achievement gap can be reduced, resulting in reduced need for special education, increase in the likelihood of healthier lifestyles, lower crime rates and overall reduction in social costs (Heckman, 2011). Findings have shown for every dollar invested in high-quality early childhood education, there is an annual 7-10% return on investment (Heckman, 2011).

When children are unable to reach their full educational potential, not only is the individual impacted, but also the global economy by increasing funds needed for additional assistance for children. Higher rates of individuals with low literacy proficiency will decrease the overall long-term gross domestic product (GDP) growth rate. If GDP rate decreases, the value of our goods and services in the country will decrease, resulting in lower economic health of the country (Aslan, Menegaki, & Tugcu, 2016).

Impact on Policy Decisions

Major recommendations have been made regarding primary care providers promoting early childhood reading. Although there are no policies available, the impact of Reach Out and Read© can substantially help address literacy and education of
disadvantaged children across the United States. The public sector, corporations, and foundations, as well as the American Academy of Pediatrics and the National Association of Pediatric Nurse Practitioners, have endorsed the program (Reach Out and Read©, 2014; AAP, 2014; AAPNAP, 2015). The findings of the project support the importance of early literacy for children. The goal is primary care providers will help support the greater literacy outcomes in children by supporting the change and integrating the program into practice.

**Impact on Quality of Health Care**

Primary care providers serve as substantial role models and motivators for life changes through the Reach Out and Read© program. They are able to build rapport with families by assessing, educating and promoting healthy lifestyle changes, as well as implementing early reading habits. Families received holistic care by the primary care provider addressing healthcare and educational needs for their children.

**Impact on Rural or Underserved Populations**

The Reach Out and Read© program places special emphasis on rural and underserved populations where children are at most risk for reading failure (Reach Out and Read©, 2014). The program provides children with at least 10 books before entry into kindergarten and educates parents to regarding the importance of reading aloud to their children. Children of underserved populations will be provided resources to increase reading skills and literacy outcomes.

**Summary**

This DNP project has improved literacy outcomes of children less than five years of age by promoting rapport and encouragement by primary care providers to families during well-child visits. Primary care providers have considerable ability to positively
impact children by serving as trusted role models for families. The Reach Out and Read© program aims to serve rural underserved populations by narrowing health disparities through gifted resources and education. Primary care providers in the rural Midwestern primary care clinic are trained and educated regarding the implementation of the program addressing literacy problems and providing positive impacts on children and families in the community.
Chapter 4:

Findings

Introduction

Reach Out and Read\textsuperscript{©} has substantial potential to make life-long impacts on children. Early introduction to reading has proven positive influences on learning and readiness for school (Graman, 2007; High et al., 2000; Jones et al., 2015; Kalb & van Ours, 2014; Lonigan et al., 2008; Needleman et al., 2005; Sanders et al., 2000; Zuckerman, 2009). Primary care providers serve to guide parents and children through knowledge and expertise toward greater health outcomes. Through the Reach Out and Read\textsuperscript{©} program, primary care providers can help impact children at early ages by promoting reading by parents to increase health and literacy outcomes (High et al., 2000; AAP, 2014; Kumar et al., 2016; Lonigan et al., 2008; Jones et al., 2015; Kalb & van Ours, 2014; Needleman et al., 2005; Sanders et al., 2000).

The Reach Out and Read\textsuperscript{©} program was implemented in a rural Midwestern primary care clinic. The project consisted of a non-randomized, quasi-experimental quantitative survey to parents of children ages six months to five years of age attending well-child visits from January to February 2017. Pre-questionnaires were utilized and administered to a convenience sample with post-questionnaires administered two months after introduction to the program. The project evaluated the frequency of shared book reading parents participated in weekly with their child, time spent reading, and assessed the child’s attitudes toward reading. The primary focus of the project was to evaluate if the Reach Out and Read\textsuperscript{©} program increased the frequency in days per week parents read to their child after introduction to the program.
Demographics

The sample size of parents of children attending well-child visits ages six months to five years of age over the two-month time frame was 10. The children consisted of four males and six females ranging from six months to four years of age (Chart 1). The ethnicity was primarily Caucasian (90%) and of English-speaking language (90%). The parents of children were also primarily Caucasian (90%) and English-speaking language (90%) with 80% having either a 2-year or 4-year college education. The ages of the parents varied with a majority being within the category of 21-30 or 31-40 years of age (40% and 50% respectively). The payment source of the project sample was predominately private insurance (80%) with no children lacking insurance coverage.

No correlation could be identified after analyzing education, age, or payment source of the parent of each child. The one parent with the highest education in the project sample (masters/doctorate/PhD education) had a child of an age with no other children with data at a similar age, making it challenging to determine a correlation. A larger sample size may be able to provide more efficient data regarding correlations between education of parents and frequency of shared book reading.

Chart 1
Results

The results of this project indicated the Reach Out and Read© program can positively impact children. The objective of the project was to evaluate if the Reach Out and Read© program would increase the number of days per week parents read to their child. The Wilcoxon signed rank test, a non-parametric test, was used to compare the paired groups to evaluate the differences between the two questionnaires. The raw data is listed below in Table 1 and 2. Each project participant is identified on the far left column with ID 1-10. Pre- and post- indicate pre- and post-questionnaire responses with IR indicating “interest in reading,” TPW indicating “time per week spent reading to the child,” and TSR indicating “time spent reading per occasion.” IR responses were on a Likert scale of 1-5, as indicated on the far left column in Table 2. TPW responses included 0-1 times per week, 2-3 times per week, 4-5 times per week, and 6+ times per week. TSR responses included 0-5 minutes, 6-10 minutes, 11-15 minutes, and 16+ minutes.

Table 1

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After introduction to the program, the number of days per week increased from an average of 3.5 days per week to 3.8 days per week \((p=0.250; s=0.48)\) (Table 3). There was a likelihood of an accurate representation of the sample to a population \((s^2=0.233)\). Statistical significance was not found but clinical significance can be concluded with a slight increase in the frequency. This slight increase revealed children were being read to at a higher rate after implementation of the Reach Out and Read© program, which in turn may possibly impact better outcomes and attitudes toward literacy and educational outcomes.
Table 3

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<td>Pr&gt;=</td>
<td>M</td>
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Additional other findings following introduction to the Reach Out and Read© program included increased time spent reading per occasion and child’s attitude toward reading. The time spent reading per occasion increased from an average of approximately 9 minutes per occasion to approximately 11 minutes per occasion \( (p=0.7266; s=1.059) \) (Table 4). Variability in the findings was 1.122 with standard error of 0.335. The child’s attitude toward reading also increased from an interest level of 4.1 on a Likert scale of 1-5 to 4.6 \( (p=0.375; s=0.972) \) (Table 5). The variance of the findings was 0.944 with standard error of 0.307. Both findings were not statistically significant but may indicate a clinical significance through enhanced time spent reading and increase in child’s attitude toward reading.
Table 4

<table>
<thead>
<tr>
<th>Variability</th>
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<tr>
<td>Standard Deviation</td>
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<tr>
<td>Standard Error Mean</td>
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Table 5

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<tr>
<td>Standard Deviation</td>
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<tr>
<td>Variance</td>
<td>0.94444</td>
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<tr>
<td>Range</td>
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<tr>
<td>Standard Error Mean</td>
<td>0.30731815</td>
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Barriers

Barriers in the project included lack of variability of child ages and number of children at home. One parent voiced decreased interest and attention in her younger children making time spent and frequency to be reduced. Although this was lower at the
younger age, the children may gain greater attention spans and interest in reading as they advance in age. When introduced earlier, the children gain increased attention and interest at a younger age and frequency and time spent reading will in turn increase.

Another barrier in the project would be the number of children in the household. With greater number of children in the household, parents may find it difficult to spend time with each child. This may impact the number of days per week parents read to each child and the time spent reading.
Chapter 5:

Conclusions

Discussion of Outcomes

Frequency of shared book reading is enhanced through early introduction to the Reach Out and Read© program to children ages six months to five years of age (Needleman et al., 2005). In this project, findings indicated shared book reading frequency, time spent reading, and child’s attitudes toward reading are enhanced after introduction to the Reach Out and Read© program. As discussed earlier, there was an increase in shared book reading frequency after introduction to the program. Although statistical significance was not found, clinical significance is positively impacted by the Reach Out and Read© program. Not only did parents read more frequently with greater time spent reading with their children, but attitudes toward reading are also enhanced.

The goal of this project was to find an increase in shared book reading after the introduction of the Reach Out and Read© program to children ages six months to five years of age. Through education and guidance by the primary care provider, there was a finding of increased shared book reading along with increased interest in reading and time spent reading per occasion. One parent voiced not realizing the early impact of reading and how important it is before the child begins speaking. After education was provided to parents at the well-child visit, they were able to build routines with daily reading regimens with their children.

Findings of this project also concluded an increase in interest and time spent reading per occasion. As frequency of shared book reading increased, the child’s interest in reading and time spent reading per occasion also increased. Although variable factors
may have played a role in this finding, children may have learned patience through the daily routines of reading as well as gained an appreciation and interest in shared book reading with their parent. With enhanced interest in reading, relationships between parents and children may have been enriched through greater time spent together. The routines and time spent with the child not only impacted the child but also helped parents build a stronger relationship with their child, as one parent voiced, enjoying the individual time spent with their child during shared book reading.

Parents are reminded 10 times within five years through the Reach Out and Read© program regarding the impact they can have on their children’s literacy outcomes. With implementation at six months of age, parents have the capability to enhance their child’s future outcomes at an early age. The Reach Out and Read© program provides education and anticipatory guidance at each visit and reiterates the importance of shared book reading with young children. The program provides the parents with multiple opportunities to learn and enhance their child’s health and educations outcomes at each well-child visit before five years of age. With 10 visits before five years of age, parents also have many opportunities to ask and seek advice from the primary care provider regarding advice to help their child grow and ways to incorporate shared book reading into routines at home. Parents of children less than five years of age have minimal guidance regarding educational and literacy outcomes so primary care providers serve as distinct support and leaders to parents at an early age.

Limitations

Major limitations during the project occurred during introduction to the program. With occasional lengthy wait-times for primary care providers, nurses voiced introducing
the program to the parents and children while providing the developmentally appropriate book. Even though nurses are able to provide education regarding literacy outcomes and promotion of early book reading, they did not receive the program training nor do they have the knowledge base of the primary care providers to provide the adequate education to the parents. This proposed an issue as the nurses did not receive the training of the Reach Out and Read© program and how to properly discuss the implications with each parent, which threatens adequate understanding and education of the parent during the program interaction.

Another limitation that was voiced during discussion with primary care providers included time constraints during the well-child visit. Two primary care providers admitted to short discussions with parents regarding shared book reading due to limited appointment times. Discussions with parents varied depending on age of the child but most tried to provide anticipatory guidance toward literacy outcomes for a couple minutes throughout the visit. Through short discussions with parents, primary care providers admitted inadequate education and understanding might have been impacted.

The small sample size with a short data collection period may have proposed a threat of inadequate representation. The shortened data collection period may not have allowed adequate time for new routines to be set and sufficiently evaluate the change in frequency parents read to their child per week. The small sample size may not provide appropriate representation of the parents and children being introduced to the program.

**Clinical Implications**

The findings of this project have supported impacts on children’s potential literacy outcomes. The Reach Out and Read© program encourages parents to read to
their children starting at six months of age. The findings of this project indicate early literacy programs increase the number of days per week parents read to their children, time spent reading with their child during each occasion, and child’s attitude toward books and reading.

Primary care providers should encourage early book reading during well-child visits to increase health and literacy outcomes. Primary care providers serve as role models and motivators for life changes and have the ability to impact children at an early age by promoting healthy lifestyles and early reading habits. Through interest in literacy outcomes, not just health outcomes, primary care providers are able to build rapport and trusting relationships with parents and families.

The rural Midwestern primary care clinic in which the project was implemented had positive attitudes and outlooks on the program. With monetary gifts affirming program sustainability for at least five years, organizational attitudes are optimistic toward the program. The clinic nurses voiced positive attitudes toward the program with many appreciative and enthusiastic parents regarding early literacy promotion for their children. The clinic has continued to use the Reach Out and Read© program during well-child visits and have voiced assurance to continue the program indefinitely.

Organizational Impact

The rural Midwestern primary care clinic has shown interest with the Reach Out and Read© program and what impacts it can provide for the community and organization. During implementation, the organization publicized the program through the local newspaper and Internet. Through publicity and promotion of the project, the organization hopes to achieve a higher number of families utilizing the organization and its services.
By increasing awareness of the program, the organization hopes to show families the engagement in not only their child’s healthcare needs but also educational needs by building a greater holistic approach to care. The vision of the organization is to exceed customer’s expectations so by increasing patient satisfaction and quality of care, expectations is being surpassed. Families will gain an appreciation of the care received at the organization with knowing healthcare and educational needs of their children are being addressed.

**Financial Impact**

The Reach Out and Read© program invests in early introduction to reading for disadvantaged children. With intentions to reduce rural and underserved disparities in children, the program works to assure children are able to reach their full educational potential. When the achievement gap is reduced, there is a reduction in the need for special education, increased healthy lifestyles, lower crime rates, and reduced social costs (Heckman, 2011).

With more time and money spent toward preventative measures, financial savings may be impacted. Studies have proven a positive return on investment with money spent on high-quality early education (Heckman, 2011). Spending more money on preventative medicine and early education, economies can be positively impacted through future savings.

**Impact on Policy Decisions**

Major recommendations regarding primary care providers promoting early childhood reading have been made. Primary care providers are at the forefront to impact children at an early age. There are multiple early childhood reading programs available
encouraging children to read, but there is no policies promoting early literacy with a lack of programs starting at six months of age. The Reach Out and Read© program has gained much attention, including endorsements by the AAP and the NAPNAP, supporting the need to promote literacy and education of disadvantaged children across the United States (AAP, 2014; NAPNP, 2015). Primary care providers can help support greater literacy outcomes of children by integrating the program into practice.

**Impact on Quality of Health Care**

The Reach Out and Read© program helps provide a holistic approach to care by addressing both healthcare and educational needs for children. Primary care providers are able to build rapport with families by not only assessing and promoting healthy lifestyle changes, but by also promoting early reading habits. Primary care providers serve as significant motivators for life changes and have great ability to impact patients and families through education and guidance. By addressing needs at early stages in life, primary care providers are able to prevent unhealthier and inferior outcomes.

**Impact on Rural or Underserved Populations**

The Reach Out and Read© program aims to serve rural and underserved populations where resources are limited and reading failure is at highest risk. By providing children with at least 10 books before entry into kindergarten, children are able to have available resources in their home to increase reading skills. Through education regarding the importance of reading aloud, parents are able to gain greater understanding of the impacts they have on their child’s literacy outcomes. The Reach Out and Read© program can help close the disparity gaps and assist underserved populations.
New Evidence Generated for Practice

This project indicates literacy promotion can positively impact parents and their children. Primary care providers should encourage reading at least three times a week starting at six months of age. Primary care providers have considerable ability to positively impact children by serving as trusted role models for families. By encouraging at home shared book reading and educating parents on the importance of starting shared book reading early, children can thrive through substantial educational and health outcomes.

The Reach Out and Read© program is an evidence-based program with substantial outcomes in children of rural and underserved populations. Primary care providers should incorporate this program into practice to address literacy outcomes at an early age. Many programs are available for children to close disparity gaps in underserved populations, but most do not aim for children who are six months of age. This program provides underserved families the resources and guidance to help children thrive and reach healthier outcomes in their life.

As healthcare continues to promote preventative medicine, primary care providers have the capability to prevent literacy disparities in children of young ages. Parents have the ability to help their children grow and achieve substantial outcomes in their future. Through anticipatory guidance, education, and resources from the primary care provider, parents will gain the knowledge and understanding of how shared book reading at home can positively impact their child and prepare them for educational opportunities.

Greater satisfaction amongst families and organizations can be identified through the Reach Out and Read© program. As primary care providers address educational
outcomes as well as healthcare outcomes, families gain an appreciation and satisfaction for the care they are receiving from the primary care provider. When parents take time to read to their children, greater interest and enjoyment of the shared book reading may be found while building stronger relationships with their child.

**Recommendations for Future Projects**

This project guides research in rural communities impacted by the Reach Out and Read© program. As the program aims to serve disadvantaged children and families, more research needs to be done in rural communities. With fewer resources available, this program helps provide books to families at early ages as well as education to parents regarding literacy outcomes. Rural communities have fewer opportunities for families to gain education and guidance regarding educational outcomes. The Reach Out and Read© program can help close this disparity gap in the rural population through direction and instruction by the primary care providers during well-child visits.

The support of the organization and community offers sustainability of the project for several years. The organization has voiced support of this project and requests continuation of the Reach Out and Read© program for many years. After publicity in newspaper, enthusiastic comments were made from community members in support of the program. Through promotion of the project, surrounding communities have also inquired concerning Reach Out and Read© program implementation at their facilities and ways to engage children at an early age in literacy programs. The project has shown substantial impacts on the community and organization showing engagement in early childhood literacy outcomes.
The project found clinical significance indicating positive impacts of the Reach Out and Read© program. Future research can be done evaluating the qualitative findings of the primary care providers and families. Many comments were made regarding the program during the implementation of the program, so proper evaluation of the feelings and attitudes toward the program would be beneficial for the training of the program to improve introduction of the program and implementation into practice.

As stated earlier, limitations in practice were found with nurses doing the introduction and primary care provider time-constraints during the well-child visit hindering adequate introduction of the program. By evaluating the feelings and attitudes of the program, research can help discover ways to improve implementation into practice and education being provided to primary care providers, nurses, as well as parents of children attending the well-child visits. The Reach Out and Read© program has significant capability to positively improve educational and health outcomes of children so on-going research is crucial to consistently provide the latest evidence-based findings and education to families in rural and disadvantaged areas. Educational and health disparity gaps can be diminished through proper introduction and implementation of the Reach Out and Read© program in rural and disadvantaged areas.


evidence. *Archives of Disease in Children, 93*(7), 554-557. doi 10.1136


Jones, V., Brown, T., Molfese, V., Ferguson, M., Jacobi-Vessels, J., Bertsch, C.,


literacy. Retrieved from https://www.napnap.org/chl


Factors associated with increased reading frequency in children exposed to Reach Out and Read. *Academic Pediatrics, 15*(6), 651-657. doi 10.1016/j.acap.2015.08.008


Appendix A: SDSU IRB Approval Form

South Dakota State University

To: Melanie Miller, College of Nursing

Date: December 27, 2016

Project Title: Reach Out and Read: Incorporating Early Literacy Promotion into Practice

Approval #: IRB-1612012-EXM

Thank you for bringing your project to the Human Subjects Committee. Your project is approved as exempt from the Common Rule. The basis for your exempt status (from 45 CFR 46.101 (b)) is:

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

If there are any unanticipated problems involving risks to subjects or others or changes in procedures during the study, please contact the SDSU Research Compliance Coordinator. At the end of the project please inform the committee that your project is complete.

If I can be of any assistance, don’t hesitate to let me know.

Sincerely,

Dianne Nagy
Acting IRB Coordinator
Appendix B: Facility Approval Letter

Madison Healthcare Services
900 2nd Ave
Madison, MN 56256

July 25, 2016

Reach Out and Read National Center
89 South Street, Suite 201
Boston, MA 02111

To Whom It May Concern:

I am excited to write this letter in support of our clinic’s application to become a Reach Out and Read site. After lengthy discussion with supporters and facilitators of the Reach Out and Read program, I am eager to introduce and implement this program in our community. By using a holistic approach, the healthcare providers are able to gain patient satisfaction and respect by addressing educational outcomes along with healthcare outcomes during well-child visits.

The community of Madison has a variety of childhood literacy programs with hope to combat the disparities children face in the rural, underserved area. Madison Healthcare Services can partner with the community to address childhood literacy and promoting parents to read aloud to their children. As substantial role models and motivators for life changes, healthcare providers are able to build rapport with families by assessing, educating, and promoting healthy lifestyle changes as well as implementing early reading habits in children.

The Chief Executive Officer at Madison Healthcare Services has participated in the Reach Out and Read program and favorably supports implementation in our clinic. With the experience, he has many suggestions for adequate implementation and sustainability of the program within our facility.

We are excited to collaborate with our Early Childhood Initiative committee through the local school district for funding as well as community donations. Please consider our application seriously, and do not hesitate to contact me if you should need any further information.

Respectfully yours,

Melanie Miller, DNP student
Project Manager
Medical Director

Erik Bjerke, CEO
Executive Director
## Appendix C: Evidence Table

<table>
<thead>
<tr>
<th>Citation</th>
<th>Level of Evidence</th>
<th>Sample/ Setting</th>
<th>Participants (n)</th>
<th>Study Design / Purpose</th>
<th>Intervention</th>
<th>Results</th>
<th>Comments; Strengths and limitations</th>
</tr>
</thead>
</table>
| (Graumann, 2007) | IIB (Graumann, 2007) | Small city with nearby communities of approximately 15,000 people | n=14 families    | Quasi-experimental with control site of no ROR and intervention site with ROR program | Data collection at child’s 6 month well-baby visit and follow-up at 12 month well-child visit using Before and After Books and Reading (BABAR) parent survey | -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%. (p=.44)  
-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. (p=.10)  
-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. (p=.45)  
-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. | Limitations: Lack of phones, language barriers, lost participants due to lack of follow-up, small sample size  
Strengths: Substantial impact of reading volunteers to children in waiting rooms |
REACH OUT AND READ

| Study (High, LaGasse, Becker, Ahlgrén, & Gardner, 2000) | IIA | Multicultural group of low-income families with 5- to 11-month olds | n=205 | Quasi-experimental to evaluate the effectiveness of literacy promoting interventions delivered by pediatric providers as part of well-child care | Families of intervention group received developmentally appropriate books and educational materials and advice about sharing books with children | -Statistically significant finding when sharing young books with young children with moderate impact on children’s learning 
-40% increase in Child-Centered Literacy Orientation among intervention compared to 16% among controls
-Intervention families read more (4.3 vs 3.8 days/week)
-Receptive and expressive vocabulary scores were higher in older intervention toddlers but not younger
-The intervention’s effect on child language was mediated through increased shared reading with toddlers | -One of first significant studies evaluating the effectiveness of home reading as an intervention through well-child visits
-Average of 3.4 well-child visits in both groups, 75% were re-interviewed with the MacArthur Communication and Development Inventory Strengths: Simple and inexpensive intervention |

| Study (AAP, 2014) | IV A Appraised by | Primarily care providers | Primarily care providers | Policy Statement from | Encouraging early literacy intervention | -The American Academy of Pediatrics (AAP) recommends that | -Research shows ROR is associated |
| Agree II: 65% score | encour aging parent s of childrenbeginning in infancy through age of school entry | and parent s of children less than 5 yearsof age | The Ameri can Acade my of Pediatric s | ns in children less than 5 years of age | pediatric providers promote early literacy development for children beginning in infancy and continuing at least until the age of kindergarten entry by (1) advising all parents that reading aloud with young children can enhance parent-child relationships and prepare young minds to learn language and early literacy skills; (2) counseling all parents about developmentally appropriate shared-reading activities that are enjoyable for children and their parents and offer language-rich exposure to books, pictures, and the written word; (3) providing developmentally appropriate books given at health supervision visits for all high-risk, low-income young children; (4) using a robust spectrum of options to support and promote these efforts; and (5) partnering with other child advocates to influence national messaging and policies that support with more positive attitudes toward reading aloud, more frequent reading aloud by parents, improved parent-child interactions, improvements in the home literacy environment, and significant increases in expressive and receptive language in early childhood. **Strengths:** Specific recommendations for providers and policy makers **Limitations:** Major factors of implementations include costs of books, training of...
**Limitations**: Although it is clear that shared reading improves oral language skills and print knowledge, there is not yet evidence that shared reading promotes the development of other emergent literacy skills or improvements in conventional literacy skills. Lack of studies reporting data to conclude the impact of age, risk status, and agent of...
**Strengths:**
Studies indicate shared-reading interventions provide early childhood educators and parents with methods to stimulate development of oral language skills.

**Future:**
Examine types of shared-reading interventions (Jones et al., 2015).

**Limitations:**
No control group, questionnaire did not provide information on parents’ perceptions or preferences, used convenience sample (bias introduced), 33 families.

<table>
<thead>
<tr>
<th>(Jones et al., 2015)</th>
<th>IIB</th>
<th>Parent(s) and guardians of children between 12-36 months of an inner city pediatric care office in southern</th>
<th>n= 72</th>
<th>Quasi-experimental study with evaluation of pre- and post-intervention assessments</th>
<th>ROR with mathematics content added and introduced during well-child visits</th>
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<tr>
<td></td>
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<td>Parents read the books and read them more than once (86.9–89.6%) across the three follow-up weeks</td>
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<td>-Parents found the book talk information to be helpful (79.7–83.6%)</td>
<td>-Fewer parents reported doing the recommended activities with their children (36.1–43.8%)</td>
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<td>-The total mathematics engagement score for reading about the five</td>
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<td>Study Details</td>
<td>Findings</td>
<td>Future Research</td>
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<tr>
<td>USA</td>
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<td>USA</td>
<td>Improved mathematical concepts (counting, shapes, numbers, simple addition or subtraction, and position) significantly from pre-intervention to post-intervention ($F=57.55; p &lt; .001$). Reading about non-mathematics concepts (alphabet and colors) increased from pre-intervention to post-intervention, but the differences were not statistically significant ($p &gt; .05$).</td>
<td>Use mixed-methods to gather more comprehensive data and inclusion of comparison group, use observation of parent-child interactions.</td>
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*(Kalb & van Ours, 2014)*

Families with children in Australia, Wave 1 (age 4-5), $n=498$, Waves, Empirical analysis of the Longitudinal study, Started in 2004 with children 0-1 and 4-5 years of age with Better reading outcomes and higher cognitive skills for boys and girls who have been read to more often at age 4-5.

*Additional findings:* Across all “reading to” frequencies.
lia of appropriate ages selected from the Medicare enrollment database and invited to participate in the study.

<table>
<thead>
<tr>
<th>Wave</th>
<th>Age Range</th>
<th>N</th>
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<tbody>
<tr>
<td>2</td>
<td>6-7</td>
<td>446</td>
</tr>
<tr>
<td>3</td>
<td>8-9</td>
<td>433</td>
</tr>
<tr>
<td>4</td>
<td>10-11</td>
<td>416</td>
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Total number of dropouts from Wave 1 to Wave 4 = 819

- questionnaires sent to parents and teachers of children evaluating reading skill measures. Goal is to investigate the importance of parents reading to children by evaluating the frequency of reading per week and literacy outcomes.

- Control group (frequency 0-2) compared to boys/girls 3-5 and 6-7 times a week

- consistently show that the lowest score is observed less often and higher scores are observed more often amongst children whose parents read to them more frequently.

The number of books at home has a positive effect.

We show that there is an important role for parents in the educational performance of their children. Analyzed Australian data on parental investments in terms of the number of times per week they read to their children found that reading to children at age 4-5 frequently has significant positive effects on the reading skills and cognitive skills of children at least up to an age of 10-11.

Girls are more likely than boys to score high on the reading skill index and on the learning/cognitive measure. The actual presence of other children in the household at that point in time that affects the frequency the study child is read to, and not the socioeconomic status of the family that the number of children variable may reflect.

Future:
Evaluate ages 2-3, Evaluate reading at childcares or schools to find similar effects.

Strengths:
<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Sample Description</th>
<th>Methods</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Kuo, Frick, &amp; Minkovitz, 2010)</td>
<td>IIA</td>
<td>Civilian, noninstitutionalized persons drawn from a nationally representative sample of households that participated in the prior year’s National Health Interview Survey.</td>
<td>Analyses of the 2004 Medical Expenditure Panel Survey (MEPS) for national representative estimates of health care services used, costs, and payment methods.</td>
<td>Each question was scored on a four-point Likert scale from low to high. Bivariate analyses were performed using chi-square statistics. Logistic regressions were used to describe the association of family-centered care with anticipatory guidance and unmet needs. Multivariate models adjusted for predisposing factors. Family-centered care (Table 3) was associated with increased receipt of anticipatory guidance both before and after adjusting for predisposing, enabling, and need characteristics (AOR 1.45; 95% CI 1.19, 1.76). Family-centered care was associated with enhanced anticipatory guidance for unmet needs.</td>
</tr>
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</table>
had to say,’’ and ‘‘spend enough time with [person].’’

children without special health care needs (AOR 1.63; 95% CI 1.28, 2.07), but no association was found for children with special health care needs (AOR 1.01; 95% CI .75, 1.37).

actions or qualities of practice that may lead families to report higher family centeredness

| (Kumar, Cowan, Erdman, Kaufman, & Hick, 2016) | IB | Mothers aged 12-18 from Young Families Program (YFP) at primary care clinic in downtown Toronto | n=28 | Rando\-mized control trial to evaluate ROR program in adolescent mother’s evaluating effects on parent\al reading behavior, maternal depression, and feasibility of implementation | 3 components: Child given developmentally appropriate book, clinician provided guidance and techniques for shared book reading, and volunteer librarians modeled and counseled families about reading techniques and provided support Given questionnaire before intervention | -Results not statistically significant but found: -Children in intervention group were 2.5 times more likely to read at least 3 days per week with a caregiver, and over study period the intervention group almost doubled their likelihood of reading -The average number of days per week increased 1.2 over study period -Intervention group mothers were 7 times more likely to report reading was one of their child’s favorite activities | Survey: A 3-question survey was developed for this study using questions employed in previous ROR studies: ‘‘What are your child’s 3 favorite things to do?’’, ‘‘What are your 3 favorite things to do with your child?’’, and ‘‘How many days each week do you or another caregiver at home (e.g. baby’s father, grandparen

| REACH OUT AND READ | 68 |
n and after 3rd visit

This survey was completed at baseline and study completion.

The BDI-IA is a 21-item self-report inventory used as a screening tool for depression as well as a measure of depression severity.

Strengths:
- High recruitment and retention rate (97-93%)

Limitations:
- Small sample size, lack of long-term follow-up, lack of variety in settings

(Mol, 2011) IA Parents of preschool n=10,308 of 146 Meta-analysis to Comparing print exposure - In preschool and kindergarten print exposure explained Limitations: Children of low
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gartner s

|oolers and/or kinder
gartner s | studies | adresses the roles of book reading in language and reading development from infancy to early adulthood | to children through self-report questionnaire |
|---|---|---|---|

12% of the variance in oral language skills, in primary school 13%, in middle school 19%, in high school 30%, and in college and university 34%. Moderate associations of print exposure with academic achievement indicate that frequent readers are more successful students.

- The correlations between oral language and the home literacy composite in matched studies \((k = 11, r = .32, p < .001)\) were significantly stronger than the correlations with the frequency of shared book reading in matched studies \((k = 6, r = .16, p < .01)\). Within the set of print-exposure studies, the same pattern was present when comparing the effect sizes for print-exposure checklists on children’s literature with a single question about parent-child reading frequency \((k = 8, r = .21, p < .001)\), whereas parents’ estimation of the total number of books at

| socioecono
mic background rarely studied in the youngest age group, low evidence on association s amongst children’s general cognitive capacity, and different levels of reliability causing constraints on correlations with criterion measures. Low number of studies, lack of control, |

**Strengths:** Large and in-depth interpretati on and analysis of results amongst large age group, large sample size of studies.
home ($k = 5, r = .32, p < .001$) revealed almost identical correlations with oral language as print exposure checklists. Not only does the exposure to a story promote language development, but it is also important that parents stimulate active involvement by eliciting verbal responses to the story with the help of open-ended questions. The meta-analyses revealed that in the group of 2- to 6-year-old children print exposure is related, at moderate strength, with both oral language and basic reading skills. One of the major
**REACH OUT AND READ**

| (Needleman et al., 2005) | IIA | 16 sites across 10 states in the U.S., children 6-72 months | n=917 control and n=730 intervention, total n=1647 | Prospective quasi-experimental intervention study using convenience samples | Pre- and post-exposure to ROR program with intervention samples 17.8 months after introduction to ROR program | The average days per week of reading aloud was higher in intervention group (mean 4.7 vs 4.4, p <0.01).

Parent-reported attitudes increased including identification of books as a favorite activity, reading aloud thought of as leading to school success, use of books at bedtime, and reading aloud 3 or more days per week.

Parents exposed to ROR were approximately 1.5 times as likely to consider reading aloud a favorite activity, and similar increases with reading aloud at bedtime and reading aloud at least 3 days per week. |

**Strengths:**

Size of sample made it able to look at subgroups individually

**Limitations:**

Selection bias with reliance on convenience samples, social desirability due to parents’ responses

**Future:**

Evaluate different populations, methodological to make randomized trial

| (Peifer & Perez, 2011) | IIA | Parent s with childre n | Survey I n=300, Survey | Quasi-experimental | Sampling random survey administer | The data comparison between the two time periods showed a 77% increase in |

**Strengths:**

Power of reliability high
| (Riken et al., 2015) | IIB | Low-income population in central Milwaukee, WI. Caregivers | n=353 caregivers representing 400 individual children but after | Cross-sectional quasi-experimental study to evaluate how ROR | 25-item questionnaire from Before-And-After Books and Reading survey was administered to | -One of the most important variables to affect frequency of shared reading is receiving books from pediatrician -Dose-dependent effect: The greater number of books given to parents for children, the higher | -Caregivers who reported reading to children often were more likely than rarely reading caregivers to report
| | II | n=216 | critical methodological quality of ROR to prevent reading difficulties and academic struggles | ed early intervention and after implementation of early literacy community programs | parents reporting that they showed books to their infants on a daily basis. There was also a 71% increase in parents reading books aloud to their children on a daily basis. | having good representation of population in county, supports further development for Spanish speaking samples
| | | under age of 3 years for Survey I, parents with children less than 6 years and reside in San Mateo County | | | Limitations: Parent behaviors may impact interventions, not random assigned interventions, lack of telephone in poor families with low responses | Future: Increase interventions and measuring outcomes |
for children between 6-59 months

exclusion (age, weight, disability, incorrectly filled out, etc.) n=256

and other variables as part of bedtime routine correlate with caregiver-child reading frequency

assess home literacy environment and frequency that caregivers read to children was outcome variable.

the frequency of reading (52% of caregivers receiving greater than or equal to 4 books from pediatricians read, 28.2% of caregivers receiving 1-3 books, and 24.4% receiving no books; days per week being 5.07, 3.83, and 3.42)

reading to children as part of a bedtime routine; to be always or often interested in reading to children; and to list reading as a top 3 favorite activity to do with their child.

*Strengths*: Uses RF analysis to identify critical variables (caregiver interest in reading, number of books at home, frequency of reading, number of books received from pediatrician)

*Limitations*: Lack of true control group, convenience samples, all variables
(Sanders, Gershon, Huffman, & Mendola, 2000) IIA Hispanic immigrant parents of children ages 2 months to 5 years seen at Stanford University children’s hospital in Palo Alto, California

n=122 Intervention group =56 Control =66 Cross-sectional study, non-randomized, sample survey to assess the book-sharing activities within first-generation Hispanic immigrant families and to Exposure to Reach Out and Read program

- High FBS (≥3 times/week) was reported among parents whose children had received books from the physician when compared with parents whose children had received no books. The odds ratio (OR) was 3.62 (95% confidence interval [CI], 1.40-9.37; \( P<.05 \)). Also associated with FBS were parents reading frequently to themselves (OR = 9.52; 95% CI, 2.09-43.27; \( P<.05 \)) and national origin outside Mexico (OR = 5.54; 95% CI, 1.59-19.27; \( P<.05 \)). These findings were independent of parent’s educational

Additional: Independent effect also includes adult literacy and child age.

Future: Understand the effect of pediatric literacy programs on Hispanic immigrant children, bilingual environments, and readiness for school entry

Limitations: No strict validity

Future: randomize component s of ROR interventions (book delivery, model reading, anticipatory guidance) based on caregivers’ reports (social desirability bias)

Based on caregivers’ reports (social desirability bias)

Future: randomize component s of ROR interventions (book delivery, model reading, anticipatory guidance)
assess the effect of pediatricians giving books to their patients

- When compared with parents who reported low FBS, parents who reported high FBS were more likely to have received at least 1 book through the ROR program (58% vs 37%). This increased likelihood seemed magnified for children younger than 12 months (49% vs 27%)

- Parents exposed to even a single episode of receiving a children's book from the physician were more likely to report a higher frequency of sharing books at home with their child, compared with parents not exposed to the program

**Strengths:**
Assesses Hispanic families specifically, assesses socioeconomics, acculturation, family structure and activities and adult literacy

<table>
<thead>
<tr>
<th>(Zuckerman, 2009)</th>
<th>VA</th>
<th>N/A</th>
<th>N/A</th>
<th>Meta-analysis regarding the program’s effectiveness</th>
<th>Comparing those in the ROR program to those who are not</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Reading aloud leads to later success in reading and helps prepare children for school.</td>
<td>- More likely to report reading aloud as their favorite activity, increased centered literacy orientation, frequent reading aloud, and increased language development.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Children in ROR</td>
<td>- National Literacy Panel (2008) by the National Institute of Literacy found implications for future parental guidance and/or best practices</td>
</tr>
</tbody>
</table>

- National Literacy Panel (2008) by the National Institute of Literacy found implications for future parental guidance and/or best practices
scored 8.6 points higher in receptive language and 4.3 points higher in expressive language.

- Stimulates more verbal interaction and increased vocabulary

- Need for further expansion to those at risk due to low income or low maternal education
Appendix D: Demographic information questionnaire

Child:
Sex: Male or Female (Please circle)
Age: ________________
Ethnicity: ☐ Caucasian ☐ Hispanic or Latino
☐ Black or African American ☐ American Indian
☐ Asian or Pacific Islander ☐ Other: ________________
Primary Language:
☐ English
☐ Other: ________________

Parent:
Sex: Male or Female (Please circle)
Age group: 18-20 21-30 31-40 41-50 51-60 61-70 70 or older
Ethnicity: ☐ Caucasian ☐ Hispanic or Latino
☐ Black or African American ☐ American Indian
☐ Asian or Pacific Islander ☐ Other: ________________
Primary Language:
☐ English
☐ Other: ________________

Highest level of education you completed: (Please circle)
8th grade High School or equivalent GED 2-year college 4-year college Masters/Doctorate/PhD

How many children do you have at home? ________________

Payment Source of this well-child visit:
☐ Private Pay ☐ Preferred Provider Organization
☐ Medicaid/Medicare ☐ Private Insurance
☐ Health Maintenance Organization/Prepaid ☐ Other:

Would you like to receive the post-questionnaire via mail or e-mail?

Mail – Please provide your address below:
___________________________________________________________

Email – Please provide your email address below:
___________________________________________________________
Appendix E: Pre questionnaire

1. When did you first begin reading to your child?
   a. I don’t read to my child
   b. Under 1 year
   c. 1 year
   d. 2 years
   e. 3 years
   f. 4 years or older

2. How many children’s books do you have in your home?
   a. 0-5 books
   b. 6-10 books
   c. 11-15 books
   d. 16 or more books

3. Approximately how many times a week do you or another adult read to your child?
   a. 0-1 times a week
   b. 2-3 times a week
   c. 4-5 times a week
   d. 6 or more times a week

4. Approximately how much time do you or another adult spend reading with your child during each occasion?
   a. 0-5 minutes
   b. 6-10 minutes
   c. 11-15 minutes
   d. 16 or more minutes

5. Thinking back to when your child was a baby, did you receive advice that your child should be read aloud to from birth? If so, where did you hear this advice?
   a. Friends and family
   b. Child’s pediatrician/healthcare provider
   c. Parenting books/magazines
   d. Websites or blogs
   e. Parenting classes
   f. Other

6. Compared to other activities, how would you rate your child’s interest in books?
   (1=not interested and 5=very interested)
   
   1  2  3  4  5

Thank you for your time completing this survey! 😊
Appendix F: Post questionnaire

1. How many children’s books do you have in your home?
   a. 0-5 books
   b. 6-10 books
   c. 11-15 books
   d. 16 or more books

2. Approximately how many times a week do you or another adult read to your child?
   a. 0-1 times a week
   b. 2-3 times a week
   c. 4-5 times a week
   d. 6 or more times a week

3. Approximately how much time do you or another adult spend reading with your child during each occasion?
   a. 0-5 minutes
   b. 6-10 minutes
   c. 11-15 minutes
   d. 16 or more minutes

4. Compared to other activities, how would you rate your child’s interest in books? (1=not interested and 5=very interested)
   1  2  3  4  5

Thank you for your time completing this survey! 😊
Appendix G: Literature Search Table

<table>
<thead>
<tr>
<th>Date of Search</th>
<th>Databases Searched</th>
<th>Search Terms</th>
<th>Search Limiters</th>
<th>Number of Hits</th>
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<td>CINAHL</td>
<td>Literacy outcomes AND reading aloud AND children</td>
<td>Dates 2010-2016, English language</td>
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<td>10/5/16</td>
<td>CINHAL</td>
<td>Anticipatory guidance AND children AND healthcare providers</td>
<td>Dates 2000-2016, English language</td>
<td>12</td>
</tr>
</tbody>
</table>
Appendix H: Health Promotion Model Approval

Request of permission re: Health Promotion Model

Nola Pender <npender@umich.edu>

Dear Melanie:

You have my permission to use the Health Promotion Model in your DNP proposal and dissertation. I wish you academic success. Please see the websites below that may be helpful. Because I have been retired for some time, you will need to use CINAHL and Medline for access to latest works using the HPM.

Wishing you good health,

Nola Pender

Miller, Melanie Rae - SDSU Student

Dr. Pender,

I am writing to request permission to use your Health Promotion Model in my doctorate of nursing practice project.

I am currently enrolled in the doctorate family practice program at South Dakota State University in Sioux Falls, SD, and am in the process of writing my DNP proposal. The proposal is entitled Reach Out and Read Program: Incorporating Early Literacy Promotion Into Practice.
Appendix I: Reach Out and Read© On-line Training

Module 1: Reach Out and Read in Your Clinical Practice

Why are you and your clinic/practice in the Reach Out and Read program?

Test your knowledge!

Q: Which of the following is NOT part of the Reach Out and Read Model?

A: 1) Reach Out and Read Clinics/Practices ensure that all children in the Reach Out and Read program can read at age four
   2) Reach Out and Read Clinics/Practices create literacy-rich waiting rooms
   3) Reach Out and Read Clinics/Practices offer literacy-promoting anticipatory guidance to parents

Correct: The goal of Reach Out and Read is NOT to guarantee reading skill but to encourage parents to read aloud with their children as a way to promote early literacy and language development.

Q: Which is NOT a reason why Providers should participate in Reach Out and Read?


Appendix J: Information Sheet

Information Sheet
Participation in a Research Project
South Dakota State University
Brookings, SD 57007

Department of Graduate Nursing
Project Director: Melanie Miller
E-mail: melanie.miller@jacks.sdstate.edu

Date: _____________________

Please read the following information:

1. This an invitation for you as a parent attending a well-child visit with your child to participate in a research project under the direction of the Melanie Miller.

2. The project is entitled Reach Out and Read: Incorporating Early Literacy Promotion into Practice.

3. The purpose of the project is to determine if the Reach Out and Read© program increases the number of days per week parents read to their children ages six months to five years of age.

4. If you consent to participate, you will be involved in the following process, which will take about 5 minutes of your time: Completion of pre- and post-questionnaires.

5. Participation in this project is voluntary. You have the right to withdraw at any time without penalty. If you have any questions, you may contact the project director at the number listed above.

6. There are no known risks to your participation in the study.

7. The benefits to you are are providing your child with the opportunity to increase literacy, brain and language development, and parent-child relationships and health outcomes.

8. There is compensation of Dairy Queen certificate for a free treat for your participation and completion of the pre-questionnaire at the well-child visit and post-questionnaire 2 months after the visit. The post-questionnaire will be sent to you either via e-mail or mail and request your completion within 2 weeks.

9. Your responses are strictly confidential. When the data and analysis are presented, you will not be linked to the data by your name, title or any other identifying item.

10. As a research participant, I have read the above and have had any questions answered. I will receive a copy of this information sheet to keep.

If you have any questions regarding this study you may contact the Project Director. If you have questions regarding your rights as a participant, you can contact the SDSU Research Compliance Coordinator at (605) 688-6975 or SDSU.IRB@sdstate.edu.

This project has been approved by the SDSU Institutional Review Board, Approval No.: IRB-1612012-EXM
Appendix K: Participant Consent Form

Participant Consent Form
Participation in a Research Project
South Dakota State University
Brookings, SD 57007

Department of Graduate Nursing
Project Director: Melanie Miller
Phone No.: 320-598-7556
E-mail: melanie.miller@jacks.sdstate.edu

Please read (listen to) the following information:

1. This is an invitation for you as the parent attending a well-child visit with your child to participate in a research project under the direction of Melanie Miller.

2. The project is entitled Reach Out and Read: Incorporating Early Literacy Promotion into Practice.

3. The purpose of the project is to determine if the Reach Out and Read© program increases the number of days per week parents read to their children ages six months to five years of age.

4. If you consent to participate, you will be involved in the following process, which will take about 5 minutes of your time: Completion of pre- and post-questionnaires.

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9. Your responses are strictly confidential. When the data and analysis are presented, you will not be linked to the data by your name, title or any other identifying item.

As a research participant, I have read the above, have had any questions answered, and agree to participate in the research project. I will receive a copy of this form for my information.

Participant's Signature ______________________________ Date __________
Project Director's Signature __________________________ Date __________

If you have any questions regarding this study you may contact the Project Director. If you have questions regarding your rights as a participant, you can contact the SDSU Research Compliance Coordinator at (605) 688-6975 or SDSU.IRB@sdstate.edu.

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