RESEARCH & VALIDATION | TOPIC PAPER

MAY 2023

Reading for Life:

The Impact of Youth Literacy on Health Outcomes

YALE CHILD STUDY CENTER+SCHOLASTIC COLLABORATIVE FOR CHILD & FAMILY RESILIENCE

SCHOLASTIC

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SUGGESTED CITATION

Scholastic Research & Validation. (2023). Scholastic Reading for Life: The Impact of Youth Literacy on Health Outcomes. New York: Scholastic.

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INTRODUCTION: READING FOR LIFE

> ***The benefits of reading books include a longer life in which to read them.***
> - Avni Bavishi, Martin Slade, and Becca Levy (2016, p. 44)

There is no denying the profound impact of childhood literacy, not only on individuals, but on families, communities, and societies. Research shows the power of reading is unequivocal: it increases educational engagement, enhances equity in communities that need it, inspires critical thinking and nuanced ideas, positively impacts future economic success, and imbues young people with empathy and intelligence—qualities that are more and more important each day.

A growing body of research suggests that the impact of childhood literacy does not stop with academic, social, and economic successes. Indeed, studies show that access to books in childhood can actually impact the long-term physical and mental health of young people—resulting in higher adult brain function (Berns et al., 2013; Weinstein et al., 2021) and better physical health (DeWalt, 2005; Weinstein et al., 2021). What's more, it's possible that a love of reading in childhood might result in a longer life expectancy (Bavishi et al., 2016).

If literacy is "an important mediator in the relationship between socioeconomic inequality and health disparities" (Sanders et al., 2009, p.131), it is essential that educators and community leaders have access to the vast collection of research on the subject, providing them with every tool possible to ensure students' minds *and bodies* thrive.

Reading for Life seeks to provide a gateway to that research. Reviewing data on reading and literacy and their impact on the physical, mental, and social-emotional components of health, this paper will:

- Review the current state of children's literacy and health, particularly in the wake of the COVID-19 pandemic;
- Explore the importance of early-childhood education and literacy interventions in preschool, and their roles in health outcomes;
- Summarize existing literature on the relationship between literacy rates and physical, mental, and social-emotional health; and
- Study successful collaborations between the education and medical fields to implement literacy interventions in pediatric healthcare settings.

THE STATE OF CHILDHOOD LITERACY IN THE UNITED STATES

The 2022 National Assessment of Educational Progress (NAEP) findings reveal an unsettling portrait of childhood literacy trends in the United States. With 37% of fourth graders performing below the NAEP Basic level in reading, the percentage of students in the United States who achieve baseline literacy standards has decreased by approximately 14% since 1992, with a three-point loss since 2019—the largest score drop since the test began. The drop in test scores spanned student race, income levels, and school type and location, disproportionately affecting students in the bottom 10th percentile nationwide—students who are more likely to be from low-income communities and communities of color.

Though sobering, the decline in reading scores is not unexpected. Educators and families have raised concerns about literacy skills since March 2020, when the COVID-19 pandemic led to approximately 130,000 school closings in the United States, impacting 57 million children (Bao et al., 2020). During pandemic school closures, 93% of students nationwide engaged in some form of distance learning (US Census, 2020).

While some young people continued to thrive in distance classrooms, many struggled, especially younger students in kindergarten, first, and second grade, most of whom had not experienced in-person learning prior to the pandemic. In their 2022 report for NWEA, Meghan Kuhfeld and Karen Lewis found that first- and second-grade student achievement at the end of 2021–2022 was lower compared to prepandemic trends in reading by nearly seven percentile points (Kuhfeld & Lewis, 2022). Additionally, given the widespread closure of public institutions and organized activities during the pandemic, researchers hypothesize that 67% of kindergarten literacy skills were lost as part of a COVID-induced extended school closure slide.

Data also suggest that students attending schools primarily serving children of color or located in low-income areas were disproportionately affected by closures, an unsurprising finding considering the fact that the pandemic delivered a devastating blow to the physical health of those living in these areas. Black and Latino people were four to nine times more likely than white people to be infected with COVID (Figueroa et al., 2020).

COVID-19 AND MENTAL HEALTH

The impacts of the COVID-19 pandemic do not stop at a drop in academic achievement and a decline in literacy rates. Indeed, it is impossible to discuss the full scope of years of pandemic-related school closures and lockdowns without considering the dire mental health crisis occurring among today's children and adolescents.

Numerous surveys from around the globe found that, after the onset of the COVID-19 pandemic:

- The prevalence of **anxiety** was 18.9–23.87% in children and 15.4–39.9% in adolescents (Walsh et al., 2021);
- 7% of adolescents and children experienced an **inability to feel pleasure** (Patra et al., 2020);
- 55.6% of adolescents **experienced trouble sleeping** (Commodari & La Rosa, 2020);
- **Child sleep disorders** increased from 40% to 62% during the onset of the pandemic (Lecuelle et al., 2020); and
- 41.9% of children and adolescents with a history of **eating disorders** experienced a reactivation of their condition (Graell et al., 2020).

Even more concerning:

- A longitudinal study of **symptoms of adolescent depression** during the pandemic noted a median increase of 28% in study participants (Barendse et al., 2023);
- The percentage of children and adolescents diagnosed with **severe depression** increased from 10% to 27% over the course of the pandemic (Giannopoulou et al., 2021); and
- Healthcare workers noted a sizeable increase in **rates of self-harm and suicidal ideation, planning, and attempts** between November 2019 and May 2020, particularly among girls (Centers for Disease Control and Prevention, 2023).

All told, 56% of young people experiencing mental health conditions during and after pandemic-era school closures attribute them to the closures themselves (Shah et al., 2020). These data speak to the severity of the mental health crisis exacerbated by COVID-19, and the critical need for schools and communities to do all we can to mitigate its impact on young people.

LITERACY AND CHILDREN'S HEALTH

While it is never too late to encourage and foster literacy skills, research clearly shows a long-term impact of positive attitudes toward books and a commitment to literacy from the earliest ages, even before formal K–12 schooling has begun. The powerful influence of books and literacy reveals itself across a variety of metrics—from academic success to social-emotional skills to physical and mental health.

Educators know that home literacy environments are critical throughout childhood; by age 18, the average child in the United States will spend only 13% of his or her waking time in school (Wherry 2004). What's more, only 40% of U.S. three- and four-year-olds are enrolled in school (U.S. Census Bureau, 2020). Children from homes that foster literacy are more likely to achieve future academic success than their peers from homes without books.

Students with more books at home have **higher educational attainment**, with children growing up in homes with many books going on to receive, on average, **three years more schooling** than children from bookless homes, regardless of their parents' education, occupation, and economic status (Evans et al., 2010).

Data suggest that reading interventions are most effective when administered to preschool-age children (Hume et al., 2015). Those children who are read to at least three times a week at home are more likely to recognize each letter of the alphabet, count to 20, write their names, and read or pretend to read when they enter school (Nord, 1999). Additionally, children's vocabulary when entering first grade predicts their reading comprehension level much later, in the eleventh grade (Cunningham & Stanovich, 1998).

These advances hold true even as students move through formal educational settings: "if a child does not learn to read well within the first few years of school, then the chances of poor academic performance increase significantly" over the course of their schooling (Chaney, 2014, p. 29).

While there can be no doubt that reading skills and a commitment to literacy positively impact students' future academic success as well as their long-term economic and social growth, research points to an additional, even more powerful outcome: ***Reading makes us healthier—physically and mentally.***

HEAD START

Founded in 1965 to provide access to preschool education for low-income children, Head Start is uniquely poised to offer data and insights about the relationship between early literacy and health. Serving more than one million children and their families annually, Head Start provides comprehensive education, including information regarding health and nutrition, to "support early learning and development, health, and family well-being (Head Start Services, Para 1)."

The impact of the program on educational achievement is undeniable. The Head Start Impact Study (HSIS), which focused on the cognitive and socioemotional outcomes of Head Start students, studied the long-term impact of Head Start, using data within families. Remarkably, compared to siblings who did not participate in Head Start, graduates of the program are more likely to complete high school (Bailey et al., 2021; Garces et al., 2002; Bauer & Schanzenbach, 2016).

Head Start's long-term benefits are not limited to educational success, but also reduce the likelihood of negative health outcomes (Lacey, 2023). Recent research concluded that Head Start participants are less likely than their peers to have chronic health conditions, including obesity, at ages 12 and 13 (Carneiro & Ginja, 2014). Additionally, researchers found that Head Start participants have lower rates of depression (Carneiro & Ginja, 2014) and obesity at ages 16 and 17, and have lower rates of smoking in young adulthood (Anderson et al., 2010).

Participants in Head Start are also more likely to undergo hearing and vision screening (36.9% and 35.8%, respectively) and to be protected by child health insurance coverage at the end of the first grade than those children from similar backgrounds who did not complete Head Start programs (Anderson et al., 2010). Together, these outcomes provide a strong indicator of the benefits that can accrue when health care and education are integrated in the early childcare setting.

Head Start data are of particular interest because they reveal the far-reaching impact of a commitment to early childhood literacy, not only on academic and educational success but also on physical health and "health literacy." An additional component of the impact of literacy on health falls under the category of "health literacy."

The Centers for Disease Control and Prevention describes "health literacy" as the degree to which individuals have the ability to find, understand, and use information and services to inform health-related decisions and actions" (2023, para 2.) In exploring the wider impact that literacy can have on health, it is important also to acknowledge the direct mechanism by which reading allows improves access to health care. That is, one cannot achieve sufficient health literacy without first acquiring the necessary literacy skills to build health-related knowledge.

"Patients with inadequate literacy have less health-related knowledge, receive less preventive care, have poorer control of their chronic illnesses, and are hospitalized more frequently than other patients," write Darren DeWalt and Michael Pignone (2005, p. 463).

THE RESEARCH IS CLEAR

Reading has a broad, powerful impact on physical and mental health.

PHYSICAL HEALTH

When discussing the life-saving effects of literacy on physical health, it is important to explore research that distinguishes between educational attainment and literacy rates. While there is a body of research showing the correlation between educational attainment and health, data specifically related to literacy are less common.

A 2006 study at two primary-care clinics associated with San Francisco General Hospital offers promising and powerful data points (Schillinger et al., 2006). Adult patients with type 2 diabetes mellitus, who graduated high school, had statistically improved glycemic control compared to those who had not graduated, but literacy mediated the association between educational achievement and glycemic control. That is, if patients exhibited high levels of reading skills, they were more likely to have improved glycemic control, *whether or not they graduated from high school*.

In distinguishing between education and literacy, this study highlights the specific importance of *reading skills* in health outcomes.

In recent years, it has become more and more clear that literacy and physical health are reliably interconnected. Numerous studies have shown that lower literacy rates are associated with poor physical-health outcomes: when controlling for demographic and socioeconomic factors, individuals with lower literacy rates are less likely to receive regular preventative healthcare measures such as Pap smears, mammograms, and influenza and pneumococcal vaccinations (Bennett et al., 2009; DeWalt et al., 2004; Fortenberry et al., 2001; Scott et al., 2002).

THERE IS A CLEAR, CRUCIAL RELATIONSHIP BETWEEN CHILDHOOD LITERACY AND INTERGENERATIONAL PHYSICAL HEALTH:

In Older Children and Adolescents: Lower literacy rates are associated with higher risks of violence, aggressive behaviors, substance use, and sexually transmitted infections (Park et al., 2017; Hawthorne, 1997; Davis et al., 1999; Stanton et al., 1990; Miles & Stipek, 2006; Sanders et al., 2009).

In Adults: Individuals with lower literacy rates are at increased risk for hospitalization compared to their peers with higher literacy rates, both among those not receiving Medicare (1.69 times more likely to be hospitalized) and those receiving Medicare (1.2 times more likely) (DeWalt et al., 2004; Baker et al., 2002; Baker et al., 1997). Additionally, global studies indicate that lower maternal literacy rates predict infant mortality (Shetty, 2014). What's more, studies indicate a strong independent relationship between low maternal literacy and increased rates of maternal depressive symptoms and decreased breastfeeding (Sanders et al., 2009).

In Aging Adults: Reading and literacy are proven to impact long-term cognitive health. In 2013, Berns et al. found that reading strengthens the language processing regions of the human brain. And in their extensive research on aging, Galit Weinstein, Ella Cohn-Schwartz, and Noam Damri, posit that "early-life book-oriented environment may be important in shaping cognitive aging…and to slower cognitive decline, independently of education and life-course factors such as health, lifestyle, and socioeconomic indices." (2021, p. 274).

Perhaps most powerfully: a longitudinal study from Avni Bavishi, Martin Slade, and Becca Levy in 2016 found that **book readers live almost 23 months longer than non-readers**.

Those who read for more than 3.5 hours a week were **20 percent less likely to die over the 12-year study** follow-up than those who didn't read books. The researchers put it simply (2016, p. 44): "The benefits of reading books include a longer life in which to read them."

MENTAL HEALTH

> ***The Healing Place for the Soul***
> An inscription above a library entrance in Thebes in ancient Greece

Beyond academic success and better physical health, a commitment to literacy and a love of reading can be powerful tools in supporting mental health, including boosting self-esteem, increasing empathy, and mitigating anxiety and depression.

Boyes and colleagues' research suggests there is a strong association between reading difficulties, and depression, anxiety, disruptive behavior, and self-esteem (2018). Specifically, students who struggle with reading are more likely to have internalized mental health conditions, such as anxiety and depression. What's more, self-esteem can influence the relationship between reading skills, externalized behaviors, and mental health difficulties in general (Boyes et al., 2018).

As is the case with physical health and academic achievement, childhood literacy is shown to have a lifelong impact on mental health.

In a 2018 study, the National Literacy Trust issued a groundbreaking study that linked mental health to resilience, motivation, self-esteem, and confidence, and found that positive attitudes toward reading and writing were associated with higher incidence of all factors (Clark & Teravainen-Goff, 2018):

- 37.4% of individuals with *low literacy-engagement levels* experienced low mental health, while only 11.8% experienced good mental health.
- Of those with *high literacy-engagement levels*, on the other hand, 39.4% experienced good mental health.

THE POWER OF BOOKS AND STORIES

People have been using books to enhance mental health for centuries, knowing intuitively that stories hold power. In books, readers find themselves, their humanity, and a connection to those around us. Around the globe, readers happily report the benefits of reading—and research supports these claims.

There is a clear link between regular reading and social and emotional development and awareness—the greater access a child has to books in school and at home, the more likely he or she are able to cultivate an appreciation for diverse experiences and develop empathy for others (Cleaver, 2020). What's more, "understanding others' mental states is a crucial skill that enables the complex social relationships that characterize human societies," write Kidd and Castano in their 2013 study, adding that "reading uniquely engages the psychological processes needed to gain access to characters' subjective experiences" and increase understanding of the world around us and how others' act within it (p. 1).

In their 2018 review of research on bibliotherapy—a therapeutic approach employing books and other forms of literature to support a patient's mental health—Mumbauer and Kelchner underscore the efficacy of bibliotherapy as a treatment option for anxiety and depression. What's more, James and colleagues (2015) found bibliotherapy to be as effective as cognitive behavioral therapy for children with anxiety disorders, and as early as 1998, cognitive bibliotherapy was found to reduce depressive symptoms for adolescents (Ackerson et al., 1998).

In addition to the clear value books (both fiction and non-fiction) and reading have on mental health, even 30 minutes of reading is shown to have a measurable impact on physical health—significantly decreasing systolic blood pressure, diastolic blood pressure, and heart rate (Rizzolo et al., 2009).

With such clear research and such promising results, it is unfortunate that, as Mumbaur and Kelchner point out, "practical application strategies for school counselors are scarce (2017, p.86)." When it comes to using books as a prescription for stronger minds and bodies—especially now, in the wake of a global pandemic, educators, healthcare workers, families, and communities need as many tools as possible to keep people thriving.

EDUCATORS AND PEDIATRICIANS IN PARTNERSHIP

Despite the well-established body of research showing the link between literacy and long-term health, education and medicine remain largely isolated sectors. Over the past 30 years, organizations around the country have created a movement to change that, bringing educators and healthcare workers together to keep literacy in the conversation around healthcare.

REACH OUT AND READ

Founded in 1989 at Boston Medical Center to address disparities in literacy rates among low-income children, Reach Out and Read's design features three parts:

1. Pediatric medical professionals provide *early literacy guidance to families at regular well-child appointments.*
2. Children from birth to age five are provided *a developmentally appropriate book at each office visit*, with the aim of building an at-home library for each child, from infancy to age five.
3. Medical professionals provide each family with *a "prescription" for 10 minutes of daily reading.*

The results of early Reach Out and Read programs were impressive: The first research study found an *eight-fold* increase in parents reporting reading aloud as a favorite family activity (Zuckerman, 2009)—a powerful finding, as research indicates that joint parent-child reading increases children's language skills, with quantity and quality of that reading determining children's interest in reading as they age (Bingham, 2007).

Today, Reach Out and Read serves 4.2 million children nationwide, and studies of the program reveal a clear, powerful impact:

- Parents are 2.5 times more likely to read with their infants, toddlers, and preschoolers.
- Parents are 2 times more likely to read with their children three or more times per week.
- Families are 2.5 times more likely to enjoy reading together or to have books in the home.
- Children's language development is improved by three to six months (Reach Out and Read, 2022).

Programs such as Reach Out and Read cannot integrate literacy and healthcare alone. With Fewer than half (48%) of poor children ready for school at age 5, and only 75% of children from moderate- or high-income households prepared for Kindergarten (Williams et al., 2019), additional comprehensive interventions are necessary to ensure all children have the literacy skills to thrive physically, emotionally and academically.

READING AND LITERACY IN THE HEALTHCARE DOMAIN

Although the role of pediatricians in literacy and education remains largely undefined. the American Academy of Pediatrics (AAP) has addressed the importance of literacy. They recommend that providers promote early literacy development beginning in infancy and continuing until "at least the age of kindergarten," and that providers discuss early childhood education options with their patients' parents to promote higher-quality education (Council on Early Childhood, 2014).

The AAP advises that physicians discuss specific strategies with parents and caregivers, including encouraging reading aloud with young children, discussing developmentally appropriate shared-reading activities, and providing developmentally appropriate books at health supervision visits for all "high-risk", low-income young children. However, there are no existing guidelines for pediatricians to assess literacy or to consider literacy-rich environments as an indicator for children's physical or mental health (Council on Early Childhood, 2014).

Numerous studies have examined the potential for instituting literacy interventions in pediatric healthcare settings. In one study of families with children between six and 38 months of age, researchers used a child-centered literacy orientation survey to measure literacy-promoting behaviors at the family level and to examine the impact of providing relevant information on literacy promotion and children's books during pediatric primary-care visits (High et al., 2000). Families were asked to name their children's favorite activities, to name their favorite activities to do with their children, and how many nights each week they shared books with their child before bedtime. Upon answering, they were assigned a score and placed in a research group. At the conclusion of the study, the results were stunning: families receiving the treatment intervention had *five times the literacy orientation scores of the control group*, and children 18 months or older whose parents participated in the intervention had higher language scores than their peers (High et al., 2000).

A study of low-income Hispanic parents of infants who received age-appropriate children's books from their pediatric healthcare providers showed similar results. With a 96% follow-up rate after 10 months, parents in the treatment intervention were *10 times as likely* to read to their child three or more days per week, and to include reading among their three favorite parent-child activities (Golova, 1999). **These studies demonstrate that delivering literacy interventions to children and their families in the pediatric healthcare setting has a positive impact on literacy.**

Acknowledging the impact of literacy on so many critical aspects of our lives, how can proponents of children's literacy ensure that educators, physicians, and families prioritize books and reading for all young people? How can we improve the quality of a child's literacy environment?

WE MUST TREAT LITERACY AS THE URGENT PUBLIC-HEALTH CRISIS IT IS.

There is no denying that the United States' literacy crisis poses significant health risks to our nation. According to the National Center for Educational Statistics (NCES), 21% of adults in the United States (about 43 million) fall into the illiterate/functionally illiterate category. Nearly two-thirds of fourth graders read below grade level, and the same number graduate from high school still reading below grade level (2022).

The American Journal of Public Health reports that the inability to read and understand health information accounts for $232 billion spent in healthcare costs each year, with studies linking low literacy to problems with use of preventive services, delayed diagnosis, adherence to medical instructions, and more (Rea, 2020).

As poor literacy skills in adulthood are associated with both physical and mental health challenges, we must acknowledge the "central role of the pediatrician in school readiness" and expand pediatric primary care-based literacy interventions, which have the potential to reach children long before they enter traditional educational avenues (Hutton et al., 2019, p. 1).

While healthcare providers agree on the importance of providing literacy education, many do not know where to begin, nor do they have the resources required to triage literacy and reading challenges.

In a recent study of New Jersey general pediatricians, two-thirds of respondents felt unprepared to promote literacy due to their lack of knowledge regarding literacy resources. Only one-quarter of those surveyed participated in Reach Out and Read or an equivalent program, though half of those not participating expressed interest in including literacy assessment and intervention in their practice. Respondents stated that a lack of time, funding to support reading, and concerns regarding parents' receptiveness prevent them from engaging in literacy promotion (Mayne et al., 2018). Studies such as this one serve to underscore the need to emphasize child-literacy interventions and resources in medical-school curricula and pediatrics residency programs, to ensure pediatricians feel more prepared and knowledgeable about literacy.

At a time when healthcare workers and educators alike are overwhelmed, technology may be a welcome solution to this particular challenge. With the increased prominence of telehealth following the onset of the COVID-19 pandemic, the development of online or virtual interventions has the potential for families to experience more frequent, less stressful conversations around literacy with healthcare professionals.

TIPSBYTEXT

TipsByText, also known as Ready4K, delivers literacy interventions via text message to caregivers of children. Families received TipsByText interventions three times per week for seven months, including facts, encouragement, and reinforcements, beginning with the phrase "Doc says..."

Researchers observed an equivalent three-month gain in literacy skills due to the TipsByText intervention (Chamberlain et al., 2021). Such text-based programs have the potential to reach families more frequently, especially when combined with in-person programs implemented in pediatric primary-care settings.

HEALTH IN THE EDUCATION DOMAIN

Integration of health and literacy requires a shift in both sectors. It is not enough to ask pediatricians to add literacy assessment and intervention in their practice. An ideal partnership between healthcare providers and educators would also include school-based interventions around health, including health literacy—ensuring that children are developing the integrated resources required for a long, healthy future.

The development of school-based health centers has been shown to offer powerful benefits for students in terms of both academics and health. These centers have become a means to integrate education and health practices (Brindis, 2016). In their review of the literature on school-based health centers, Michael Arenson and his colleagues argue that the presence of healthcare providers in schools has the possibility of "mitigating the health effects of a maladaptive social ecosystem while simultaneously working to improve the ecosystem itself" (2019, p. 1). Though research on the educational impact of school-based health centers is limited, a 2016 study found that they are associated with improved grade point averages, attendance, grade promotion, college preparation, and reduced rates of suspensions (Bersamin et al., 2016).

In addition to incorporating health-related services into academic settings, literacy is also a crucial capacity for helping children gain information about health as well as future access to health care. As with so many life skills, research has shown that health literacy is best imparted through teachers, who have a unique understanding of their students and an ability to navigate the community resources required to serve the unique needs of their students (Ballard et al., 1994). While many schools include one-off health literacy units on specific topics or delivered by outside experts, data is clear that "to achieve sustainability and the desired impact on students' knowledge, skills and attitudes, health-related programs should be delivered by the classroom teacher" (McCuaig et al., 2012, p. 6).

That said, numerous studies have established the essential features of effective school-based health education programs, and noted that teacher knowledge and school-leader commitment are critical success factors in these programs (Basch, 2010; Rowling, 2009). Adding health literacy to the already full plates of teachers is a challenge, especially because it will require additional professional development, an increase in school resources and capital, partnerships with outside healthcare professionals, and buy-in from parents and families as well as classroom, school, and district leaders. But it can be done.

While most health literacy programs in the United States target adolescents, there is speculation that adolescence is too late to positively influence health-related behavior (Nash et al., 2021). In their study of five- to 12-year-olds in Uganda, Nsangi and colleagues suggest that health literacy intervention is best done in early years, so that it is able to reach the broadest segment of the population before children leave the education system and before young people develop incorrect beliefs, attitudes, and behavior related to health (2017). This strategy finds easy relevance in the United States.

These studies underscore the value of a partnership between physicians and educators in early childhood and elementary education—as early as possible to ensure children and communities thrive in mind and body. Head Start, Reach Out and Read, and TipsByText are just some examples of programs that underscore the powerful impact early literacy intervention can have on academic, social, physical, and mental health, but they cannot address the nationwide literacy crisis alone. The work is to include reading and literacy in all conversations—public and private—around child health, and to ensure that young people are given the tools they need to advocate for their physical and mental health as they grow. This paper is intended as a first step in providing a resource to do just that.

CONCLUSION: LOOKING TO THE FUTURE

The documented relationship between childhood literacy and health outcomes points to a clear need for partnership among families, educators, and healthcare providers throughout childhood and adolescence—a need that is especially important for a generation impacted by the COVID-19 pandemic.

Existing programs like Head Start and Reach Out and Read not only offer valuable insight into the impact of early literacy, they also underscore the important role pediatricians can play in delivering impactful early literacy guidance directly to families. These programs, along with new technological strategies like TipsByText provide the healthcare and education communities proven, achievable models for a thriving partnership.

Moving forward, communities, schools, and organizations should work to engage stakeholders:

- **Healthcare Providers:** Advocating for and providing additional training and resources for pediatric medical professionals around child-literacy assessment, promotion and intervention throughout childhood; integrating literacy as a measure of a child's health.
- **Educators:** Incorporating health centers in education settings when possible; providing professional development and age-appropriate content for early childhood and elementary educators to engage students in issues relating to health literacy; and communicating with pracitioners and families about health issues affecting students. Educators should continue to work with families and communities to provide a wide variety of books to foster positive reading habits in and out of schools.
- **Families:** Educating parents and caregivers about the impact of early literacy and empowering families to create a literacy-rich home environment; and providing them with the skills to advocate for their families mental and physical health.
- **Communities:** Increasing public messaging around the clear, lifelong link between literacy and health, ensuring that communities prioritize reading and books in discussions around public health issues.

By treating literacy as an urgent health issue, we can improve literacy rates and health outcomes in the United States, and ensure all children thrive—*beginning today.*

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