Reading, Relationships, and Resilience: primary care as a platform

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Disclosure

- I have no commercial relationships to disclose
- I will not discuss investigative or off-label use of a product or device
Figure 1

Percentage of Children Living Below Selected Poverty Thresholds, Selected Years, 1959-2011

Trends in Poverty Rate, by Age Group, 1959–2011

The flakes of snow covered her long fair hair, which fell in beautiful curls around her neck; but of that, of course, she never once now thought. From all the windows the candles were gleaming, and it smelt so deliciously of roast goose, for you know it was New Year's Eve; yes, of that she thought.

In a corner formed by two houses, of which one advanced more than the other, she seated herself down and cowered together. Her little feet she had drawn close up to her, but she grew colder and colder, and to go home she did not venture, for she had not sold any matches and could not bring a farthing of money: from her father she would certainly get blows, and at home it was cold too, for above her she had only the roof, through which the wind whistled, even though the largest cracks were stopped up with straw and rags.
Our hero took his bank-book, and gazed on the entry "Five Dollars" with a new sense of importance…for the first time, he felt himself a capitalist; on a small scale, to be sure, but still it was no small thing for Dick to have five dollars which he could call his own. He firmly determined that he would lay by every cent he could spare from his earnings towards the fund he hoped to accumulate.

But Dick was too sensible not to know that there was something more than money needed to win a respectable position in the world. He felt that he was very ignorant. Of reading and writing he only knew the rudiments…. Dick knew he must study hard, and he dreaded it. He looked upon learning as attended with greater difficulties than it really possesses. But Dick had good pluck. He meant to learn, nevertheless, and resolved to buy a book with his first spare earnings.
What Was Wrong With Tiny Tim?

Donald W. Lewis, MD

One of the most endearing characters in English literature is Tiny Tim, the crippled son of Ebenezer Scrooge’s clerk, Bob Cratchit. Yet the nature of Tiny Tim’s multifaceted and implicitly reversible illness is a mystery and open to debate and speculation. From details of the original manuscript and the eight film versions, it is possible to construct a differential diagnosis for Tim’s short stature, asymmetric crippling disorder, and curious intermittent weakness that would lead to his death, if untreated, within a period of 1 year. Following the ghostly visitations, Scrooge vows to assist the struggling Cratchit family financially, thereby making available the best medical care money could buy. From review of pediatrics texts from 1830 to 1850, a recommended treatment plan would have included (1) general measures such as country air and exercise, and fish oils such as cod and halibut (vitamin D), and (2) specific treatments of tonics (containing combinations of belladonna, opium, sodium bicarbonate, sodium citrate, and potassium chloride) emphasizing alkalis, and splinting and bracing the limbs. Such treatments with vitamin D and alkalization with sodium bicarbonate and sodium citrate suggest the plausible speculation that Tiny Tim had renal tubular acidosis (type I), a disorder that is characterized by growth failure and, if left untreated, complicated by osteomalacia with pathologic fractures, hypokalemic muscle weakness and periodic paralysis, nephrocalcinosis leading to renal failure, and death.

Dickens’ London of 1843? Can the usual clinical problem-solving techniques be used to generate a differential diagnosis in the attempt to settle on a single plausible explanation?

The initial step is to gather history. What is known of Tiny Tim? Sources of information include Dickens’ original manuscript, illustrations from later editions, and various film versions of the story (there are at least eight). One of Tim’s most apparent problems is his stature: he was quite short. He is not described as dysmorphic or disproportionate, nor do any later interpretations of his physical features depict his as being “syndromic.” It is safe to say that Tiny Tim’s first problem is proportional short stature.

It is also clear from the manuscript that he was a cripple. “(H)e bore a little crutch, limbs supported by an iron frame.”¹ The “iron frame” is a reference to leg braces (Fig 1). Tim has some sort of orthopedic or neurologic condition. Today, braces are used to manage spasticity, ankle-foot orthoses being a common example. In the 1840s, however, the braces were used to manage a bowing or bending of the lower extremities. Fig 2 is a classic Nicholas Andry image from an 18th-century textbook of orthopedics suggesting that braces were needed for an osteomalacic condition, rather than for spasticity.² The single crutch implies some asymmetry to his disorder, suggesting hemiparesis, poliomyelitis, hip dysplasia, or pathologic fracture. Tiny
Population-level accessibility:
- Medicaid and SCHIP expansion
- ~90% of children now covered for primary care
- ~60% of those not covered eligible for public insurance
- ~100% receive immunizations prior to school entry
- 13 to 15 visits from birth to 5 years

High engagement:
- Opportunity to build on existing relationships and parent goals
- Medical home models further promote this relationship

Low cost:
- Build on existing staff, infrastructure and visits

Early, scalable interventions
The Hart and Risley Study: Language Exposure from Parents

- Prospective study in Kansas City, Kansas
- Monthly visits: 42 homes, children 8 - 36 mos
- Each visit: one hour recording of all language
- Assessment of child’s language exposure and language development

Hart & Risley, 1995
Verbal interactions vary with SES

Cumulative # Words Heard by Age 3 (Millions)

- Poor: 10 Million
- Working Class: 20 Million
- High Income: 40 Million

Hart & Risley, 1995
Disparities in school readiness begin in very early childhood

Hart & Risley, 1995
Language at Age 3 Years and Quantity of Exposure

Hart & Risley, 1995

Total # words spoken by child

Avg # words per hour spoken to child

r = 0.62
P < .001
The Reach Out and Read Program

- Literacy-rich waiting rooms, where volunteers read aloud to children as they wait for their appointments

- Medical providers encourage parents to read aloud and offer anticipatory guidance about dialogic reading and books in everyday routines

- At every health supervision visit, a child aged 6 mos.-5 years receives a new developmentally-appropriate book – 10 books by kindergarten
Golova and High, 1999

Intervention: 66%
Control: 24%

p<0.001
Adjusted advance in language age due to ROR (mos)

*Mp<.05

THE ANNUAL IMPACT:

4 MILLION CHILDREN SERVED.

6.5 MILLION BOOKS DISTRIBUTED.

12 THOUSAND MEDICAL PROVIDERS.

5 THOUSAND PROGRAM SITES.

50 STATES AND D.C.

BY THE NUMBERS: OUR IMPACT
Promotion of interactions in play and shared reading during pediatric primary care visits

Relationship-based preventive intervention, building on:

- Reach Out and Read – targeted, based around health care visits
- Infant mental health intervention research utilizing videotaping to promote self-reflection

Similar focus to home visitation programs:
- Parent-Child Home Program (Levenstein, 1998)
- Playing and Learning Strategies (Landry, 2006)

Core component: coaching, videotaping of parent-child interaction and review of tape to promote self-reflection
Video:
• Watched together by parent-child specialist and parent
• Interactions observed and reinforced
• Additional opportunities for interactions identified
• DVD/tape given to parent to take home to share with family
Video Interaction Project (VIP)
Four Month Visit

Reading books and talking to your baby:

♥ Looking at books together with your baby is an important way to help him develop language. This is a good age to start making a habit of showing your baby books every day.

♥ As babies learn to reach and grasp, you will notice them putting things in their mouth. Babies mouth things to learn about their environment.

♥ Do not be surprised if you see your baby put the books in his mouth as well as look at the pictures!

♥ It’s important to talk to your baby all the time. As examples, talk to your baby while dressing, diapering, bathing and feeding.

Dear Dr. ____________

is enrolled in the Video Interaction Project (VIP). Please reinforce the points covered today:

- Even at this young age, sharing books with your baby is important.
- Allow baby to mouth books and objects so he can learn what things are.
- Talk to your baby at all times (e.g. when you are dressing, diapering, bathing and feeding)

These can be reviewed during subsequent progress notes and signs below.

Parent comments:
What I notice about my baby: __________________________

What I want my baby to learn by 6 months: __________________________

Questions for my baby's doctor:

Suggestions, things to do at home:

(Doctor’s signature)

_____ Date

Your child development specialist: _______

Telephone: 1 212 562 ______
Learning materials:
Provision of toys and books
Ideas for use at home

Infant

Toddler
Through age 3 years:
- Increased parent-child interactions, vocalizations
- Improved child cognitive, language, and social-emotional development
- Reduced delay, with 50% reduction in need for EI (mothers with 7th-11th grade education)

K-1st grade:
- Increased IQ (1/4 SD)
- Improved early reading
- Reduced hyperactivity

Mendelsohn et al, 2005; Mendelsohn et al, 2007; Mendelsohn et al, 2011c
BELLE Project: VIP Impacts

Published Impacts:
- Enhanced reading, teaching, verbal responsivity *Mendelsohn et al., 2011a*
- Reduced TV *Mendelsohn et al., 2011b*
- Greatest impacts: families with ≥ 7th grade ed / 9th grade literacy

Other presented impacts:
- Enhanced self-regulation / social-emotional development *Mendelsohn et al., 2012*
- Reduced maternal depression *Berkule et al., 2012*
- Reduced parenting stress *Cates et al, 2012*
Un consejo importante de su doctor:

El amor por los libros empieza en los brazos de los padres.

Esperamos que usted y su familia tengan muchas horas de placer...

Leyendo Juntos

El amor por la lectura...es parte de una niñez sana ● Making books part of a healthy childhood

www.reachoutandread.org
Un consejo importante de su doctor:

**Leyendo Juntos**

¡Es una muestra de amor! Lea con sus hijos lo más posible.

*El amor por la lectura... es parte de una niñez sana*  ■ *Making books part of a healthy childhood*

[www.reachoutandread.org](http://www.reachoutandread.org)
Why Early Literacy Matters

- Early Language and Literacy Skills
- Kindergarten readiness
- 3rd grade Reading Proficiency
- Graduation from High School
- Path to success in school and life
"God bless us everyone," said Tiny Tim.
"God bless us every one!" said Tiny Tim, the last of all.

He sat very close to his father's side upon his little stool. Bob held his withered little hand in his, as if he loved the child, and wished to keep him by his side, and dreaded that he might be taken from him.

"Spirit," said Scrooge, with an interest he had never felt before, "tell me if Tiny Tim will live."

"I see a vacant seat," replied the Ghost, "in the poor chimney-corner, and a crutch without an owner, carefully preserved. If these shadows remain unaltered by the Future, the child will die."
Bob was very cheerful with them, and spoke pleasantly to all the family. He looked at the work upon the table, and praised the industry and speed of Mrs Cratchit and the girls. They would be done long before Sunday, he said.

"Sunday. You went to-day, then, Robert?" said his wife.

"Yes, my dear," returned Bob. "I wish you could have gone. It would have done you good to see how green a place it is. But you'll see it often. I promised him that I would walk there on a Sunday. My little, little child!" cried Bob. "My little child!"

He broke down all at once. He couldn't help it. If he could have helped it, he and his child would have been farther apart perhaps than they were.
Scrooge was better than his word. He did it all, and infinitely more; and to Tiny Tim, who did not die, he was a second father. He became as good a friend, as good a master, and as good a man, as the good old city knew, or any other good old city, town, or borough, in the good old world. Some people laughed to see the alteration in him, but he let them laugh, and little heeded them; for he was wise enough to know that nothing ever happened on this globe, for good, at which some people did not have their fill of laughter in the outset; and knowing that such as these would be blind anyway, he thought it quite as well that they should wrinkle up their eyes in grins, as have the malady in less attractive forms. His own heart laughed: and that was quite enough for him.
Tavistock House, Sunday, December 23, 1855.

My dear Mrs. Watson,—I have a moment in which to redeem my promise, of putting you in possession of my Little Friend No. 2, before the general public. It is, of course, at the disposal of your circle, but until the month is out, is understood to be a prisoner in the castle.

If I had time to write anything, I should still quite vainly try to tell you what interest and happiness I had in once more seeing you among your dear children. Let me congratulate you on your Eton boys. They are so handsome, frank, and genuinely modest, that they charmed me. A kiss to the little fair-haired darling and the rest; the love of my heart to every stone in the old house.

Enormous effect at Sheffield. But really not a better audience perceptively than at Peterboro', for that could hardly be, but they were more enthusiastically demonstrative, and they took the line, "and to Tiny Tim who did NOT die," with a most prodigious shout and roll of thunder.

Ever, my dear friend, most faithfully yours.
GET A TASTE OF BOOKS!