

Health care provider perceptions of parents' health literacy and effect on treatment recommendations for pediatric asthma patients

Kristen Haven, MA

Lynn B. Gerald, PhD, MSPH

Kathleen Harrington, PhD, MPH

Context: parents and providers

- Parents are key agents in pediatric asthma management
- Low parent health literacy associated with worse pediatric health outcomes and poor asthma home management
- Provider attitudes about patients can affect communication with the patient/parent, and these attitudes are a possible source of health disparity

Context: asthma management

- Involves a lot of technical information
- Example: interpreting peak flow readings
 - Uses ranges of percentages
 - Requires relatively high (proficient) comprehension and numeracy
- See sample Asthma Action Plan
 - Relatively simple language and color coding, but still includes many components to synthesize

Context: health literacy

- Helps to explain discrepancies not explained by access
- Definitions vary:
 - Subset of reading literacy
 - More expansive: finding, understanding, evaluating, communicating, and using information
- Example: understanding how / when to take a medication, purpose of the medication, reason for instructions, etc.

Context: health literacy

- ~25% of adults at basic or below basic HL
 - Lower HL for minorities, low education level, elderly
 - 88% of adults are below proficient
- Low parental HL associated with
 - More ED visits
 - School absences
 - Over- or mis-use of asthma medication

Current study

- How do providers of pediatric asthma care perceive the health literacy of their patients' parents?
- How accurate are providers in assessing parent health literacy in comparison with parent scores on HL tools?
- How do provider perceptions affect treatment recommendations given and instructional strategies employed?
- What influences providers' perceptions?

Methods

- 281 parents of 6-12 year old asthma patients recruited at clinic visits
 - All repeat patients
- 13 providers (NPs and MDs)
- Parents completed TOFHLA and demographic survey
- Providers were surveyed after the patient/parent visit
- 6 providers interviewed in depth

TOFHLA

- Test of Functional Health Literacy in Adults
- 50 questions testing reading comprehension
 - In context of common health and healthcare situations and language
- 17 questions testing numeracy
- Can take up to 22 minutes to administer
- Short versions and translated versions exist

Questions for providers

- What is the parent's health literacy level? (inadequate, marginal, adequate)
- Did this perception cause you to change how you gave treatment instructions? (Y/N)
- Did this perception influence what treatment recommendations you made? (Y/N)
- What is the parent's ability to carry out your treatment recommendations for the child's asthma? (excellent, very good, good, fair, poor)

Analyses

- Kappa tested agreement
- Chi-square tested associations
- Logistic regression tested associations found significant in bivariate tests
- Interviews coded using qualitative methods

Results: demographics

- Complete data for 277 parent-child pairs
- 95% female
- 87% African-American
- 83% had at least a high school diploma or equivalent
- 50% had household income of <\$20,000

Results: overview

- Most parents (90.6%) scored as having adequate health literacy on TOFHLA
- Providers rated 64.3% as adequate
 - Low concordance with TOFHLA
- Providers more likely to score parents adequate who were white
- Providers more likely to score accurately parents who were white, with higher education levels

Comparison of parent TOFHLA scores and provider ratings

		TOFHLA scores			
		Inadequate	Marginal	Adequate	%
Provider Rating	Inadequate	0	4	15	6.9
	Marginal	4	10	66	28.6
	Adequate	1	7	170	64.3
	%	1.8	7.6	90.6	100

Agreement= Over= Under=

Provider ratings of parent health literacy and influence on treatment recommendations and how they are given, and perception of parent ability to carry them out

		Parent health literacy rating by provider			p-value
		Inadequate n=19	Marginal n=80	Adequate n=178	
Changed recommendations		21.1%	48.8%	25.8%	0.001
Changed instruction method		97.7%	77.5%	61.2%	0.001
Ability to carry out treatment	Poor or Fair	84%	53%	7%	<0.0001
	Good	16%	35%	35%	
	Very good or excellent	0%	13%	57%	

Results: qualitative

- Factors influencing assessment of parent HL
 - Parent ability to verbally communicate
 - Previous knowledge of the parent
 - Contradictions during visit
- Strategies and adjustments
 - Simplify plan
 - Color images
 - Analogies
 - Reducing amount of information
 - Teach-back

Conclusions

- Pediatric provider perceptions of parent health literacy, based primarily on parents' verbal exchange skills, have low agreement with a validated measure
- Perceptions were associated with recommended treatment, instructional strategies, and perceived parent ability to carry out the treatment plan

Recommendations

- Provider awareness of how biases may impact communication and recommendations
- Promotion of communication strategies and teaching tools
- Continued research and outreach/advocacy to improve health literacy

Discussion questions

- Other implications?
- Future research?
- Strengths, weaknesses?
- We asked “how accurate are providers in assessing parent health literacy in comparison with parent scores on validated HL tools?”
 - Conversely, how accurate are these tools?
 - In other words, who is right?
- What should or could health literacy interventions entail?
- Alternatives to health literacy measurement tools?