Addressing Health Literacy Issues - A Constant Challenge

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What is Asthma?
What is Asthma?

Normal Lining

Muscle Wall

Airway Passage

Normal Bronchial Tube
Background

- > 9 million children have asthma in US
- Disparities on the rise
  - Asthma rates disproportionately higher among black vs. white children
- Urban environment often implicated
  - Little attention paid to contributions at the community level within the inner-city

Source: Gupta RS, Zhang X, Sharp LK, Shannon JJ, Weiss KB. Geographic variability in childhood asthma prevalence in Chicago. The Journal of Allergy and Clinical Immunology. 2008 Mar;121(3):639-45 e1
Geographic Variability of Asthma in Chicago

1. *Rates in Chicago* - Childhood asthma prevalence, hospitalizations, & mortality rates above national average (13.9% in Chicago vs. 8% in US)

2. *Geographic Variability:* Asthma prevalence varies within and between Chicago neighborhoods

3. *Positive & Negative Factors:* Neighborhood assets and vulnerabilities explain a significant degree of variability

Geographic Variability of Asthma in Chicago

- **Average childhood asthma rate** → 13.9%
  - 12% for White children
  - 20% for Black children
  - 12% for Hispanic children
- **Rates vary among neighborhoods** → 0% - 44%
  - Black neighborhoods 4%-44%
  - White neighborhoods 2%-30%
  - Hispanic neighborhoods 0%-29%

Source: Gupta RS, Zhang X, Sharp LK, Shannon JJ, Weiss KB. Geographic variability in childhood asthma prevalence in Chicago. The Journal of Allergy and Clinical Immunology. 2008 Mar;121(3):639-45 e1
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What is health literacy?

Health Literacy is:

- your health
- health & health care information
- your health decisions
- making decisions together
- taking health action
- feeling good about your health

Australian Commission on Safety and Quality in Health Care

www.safetyandquality.gov.au
What is Health Literacy?

❖ The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions

❖ Health literacy requires the ability to apply skills such as analytical, listening, reading and, decision-making to health situations

❖ Low health literacy is likely to contribute to poor management of child’s asthma

Health Literacy & Asthma

- Asthma management has led to the development of national and international asthma treatment guidelines which include the recommendation of a written asthma action plan.
Inadequate Literacy is a Barrier to Asthma Knowledge and Self-Care (1998)

❖ Objective

➢ Determine the relationship between the ability to use a meter-dosed inhaler (MDI) and the knowledge of asthma

Inadequate Literacy is a Barrier to Asthma Knowledge and Self-Care (1998)

❖ Results

➢ Two thirds of the patients reported to be high school graduates, but only 27% of the patients read at a high school level

■ 33% read at a 7th to 8th grade level

■ 27% read at a 4th to 6th grade level

■ 13% read at/below the 3rd grade level

➢ Poor MDI technique was observed in 89% of the patients reading at the 3rd grade level.

Inadequate Literacy is a Barrier to Asthma Knowledge and Self-Care (1998)

❖ Conclusions

➢ Inadequate literacy was strongly correlated with poor knowledge of asthma and improper MDI use

Tailored Education May Reduce Health Literacy Disparities in Asthma Self-Management (2005)

❖ **Objective**

➢ Examine the relationship between inadequate health literacy and difficulties learning and retaining instructions about discharge medications and appropriate use of meter-dosed inhalers in adults hospitalized for severe asthma

Tailored Education May Reduce Health Literacy Disparities in Asthma Self-Management (2005)

❖ Results

➢ A total of 73 patients were enrolled; 16 (22%) had inadequate health literacy

■ Inadequate health literacy was associated with less knowledge about asthma medication and incorrect MDI technique

➢ Inadequate health literacy was not correlated to difficulty learning or retaining knowledge of discharge regimen or MDI techniques

Conclusions

Inadequate health literacy is a conquerable barrier to learning and remembering important asthma self-management skills.
Impact of Health Literacy of Longitudinal Asthma Outcomes (2006)

Objective

Measure the relationship between health literacy and asthma outcomes and to evaluate how outcomes are affected by health literacy through covariate
Impact of Health Literacy of Longitudinal Asthma Outcomes (2006)

❖ Results

➢ Lower health literacy was correlated with:

■ Worse quality of life

■ Worse physical function

■ More emergency visits due to asthma over a period of 2 years

Impact of Health Literacy of Longitudinal Asthma Outcomes (2006)

❖ Conclusion

➢ Lower health literacy was related to poor longitudinal asthma outcomes

➢ To improve asthma outcomes, focus on literacy skills that are required to understand, learn, and implement effective self-management

Asthma Action Plan

Primary Care Provider: ___________________________ Phone: ___________________________

My Usual Asthma Symptoms: ___________________________

My Asthma Triggers: ___________________________

YOUR SYMPTOMS YOUR ACTIONS

Green Zone: Doing Well
- No coughing, wheezing, or chest tightness
- Doing usual activities without symptoms (school, play, and sports)

Your Medicines Are: Controller Medicine(s) Before Exercise You Take: 15-20 minutes before activity.

Yellow Zone: CAUTION!!! Having Problems But Rescue Medicines Make it Better
- Coughing, wheezing, chest tightness, or difficulty breathing
- Having symptoms with usual activities that are HELPED by rescue medicines
- Waking up at night with symptoms

Your Medicines Are: Controller Medicine(s) Continue GREEN ZONE Controller Medicines Rescue Medicine: every 4 hours If you are using rescue medicines every 4 hours for more than 3 days, call your doctor's office.

Red Zone: DANGER!!! Home Plan Is Not Working
- Needing rescue medicines more than every 4 hours
- Rescue medicines are NOT HELPING
- Trouble walking and talking

IMMEDIATELY Take: Albuterol Inhaler ______ puffs with spacer Call your doctor's office GO TO THE NEAREST HOSPITAL OR CALL 911.

This information does not take the place of advice of a doctor treating your child.

Plan for a follow up appointment within 1-2 days after discharge.

Objective:

➢ Assess the elements that contribute to the effectiveness of action plan use, particularly for those with limited literacy.

❖ Results:

➢ Mean overall readability grade level was 7.2

➢ 70.0% were 6th-grade level or higher

➢ Overall, all action plans were found to be adequate, although 40.0% had an unsuitable score in at least 1 factor

■ Layout/ typography (30.0%)
■ Learning stimulation/motivation (26.7%)


❖ Conclusion:

➢ Improvements in the readability, suitability, and features of asthma action plans are needed to maximize patient and parent understanding

➢ A new low literacy plan should be developed and studied

Differences Between Asthma Action Plans

- Many plans must be filled in by hand causing more variability and errors in interpretation
- Most plans are written above 6th grade level
- Low literacy plans have more focus on pictograms and photograph
We developed a health literacy–informed, pictogram- and photograph-based written asthma action plan (WAAP) and examined whether providers who used it (with no training) would have better asthma counseling quality compared with those who used a standard plan.
A Low-Literacy Asthma Action Plan to Improve Provider Asthma Counseling: A Randomized Study (2015)

**Results:**

❖ 119 providers were randomly assigned (61 low literacy, 58 standard)

❖ Providers who used the low-literacy plan were more likely to:

➤ Recommend times of day for taking medication

➤ Recommend spacer use

➤ Address need for daily medications when sick

❖ Few mentioned inhaler color

Conclusion

❖ Use of a low-literacy WAAP improves the quality of asthma counseling by helping providers target key issues by using recommended clear communication principles.
Associations Between Parental Health Literacy, Use of Asthma Management Plans, and Child’s Asthma Control (2016)

Objective:

➢ Assess association between parental health literacy, ability of parent to use written management plan, and child’s asthma
Associations Between Parental Health Literacy, Use of Asthma Management Plans, and Child’s Asthma Control (2016)

❖ Results:

➢ 25% of parents had limited health literacy

➢ Of those parents, 38% of their children had not well/poorly controlled asthma

➢ Health literacy was associated with written asthma management plan (WAMP) score

➢ WAMP not associated with asthma control

Associations Between Parental Health Literacy, Use of Asthma Management Plans, and Child’s Asthma Control (2016)

❖ Conclusion:

➢ Health literacy is associated with parental ability to use written asthma management plan to respond to asthma attacks
Conclusion

❖ Low levels of health literacy have proven to be important barriers in the proper self-management of asthma

❖ Health literacy has improved in asthma over the years

❖ Still need improvements