A Picture is Worth a Thousand Words: Using Pictographs to Address Limited Health Care Literacy

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**Background**

According to Welch, VanGeest, and Caskey (2011), low health care literacy is associated with:
- Reduced likelihood of compliance with medical instructions
- Underuse of preventative services
- Delayed presentation and diagnosis with increased hospitalizations and length of stay
- Higher medical costs
- Poorer health outcomes

Limited healthcare literacy in emergency department (ED) patients is associated with:
- Higher emergency department utilization and greater recidivism (Griffey et al., 2014)
- Increased proportion of non urgent ED visits and increased ED use for pediatric patients (Morrison et al., 2014)
- Inability to comprehend discharge instructions and provide appropriate homecare (Engel et al., 2009).

Local Context:
- Combined pediatric and adult emergency department with a large number of visits for non-emergent issues.
- Homecare practices were expressly different from routine discharge instructions among repeat clients to a large community emergency department.

**Methods I: The Research Study**

**Phase I: The Research Study**

**Phase II: The Intervention**

Methods

Over a three month period, 150 parents of children (0-17 years), who visited the emergency department, for non-emergent reasons, were asked to participate in an IRB approved study to assess health literacy. A bilingual translator administered the Newest Vital Sign, a health literacy assessment tool in English and Spanish.

The Newest Vital Sign, (Weiss, 2005) a validated tool can be administered in under 3 minutes. It includes:
- 6 questions about an ice cream label
- Questions read to participants and answered by referring to data on the label
- Answers scored as correct (1 point) or incorrect (0 points)
- Assessment of reading comprehension, numeracy, document, and prose health literacy

Results

A total of 79 Spanish speaking and 71 English speaking participants entered the study.

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever care</td>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>70</td>
<td>4</td>
</tr>
<tr>
<td>Gastroenteritis</td>
<td>117</td>
<td>4</td>
</tr>
<tr>
<td>Orthopedic conditions</td>
<td>24</td>
<td>5</td>
</tr>
<tr>
<td>Asthma</td>
<td>9</td>
<td>2</td>
</tr>
</tbody>
</table>

Findings demonstrated that language was a significant predictor of health care literacy (p<.001). Both English (3.82 out of 6) and Spanish speaking (2.61 out of 6) clients were assessed to be at risk for limited health care literacy.

Implications of the study findings:

- Standard, narrative discharge instructions written at a 6th grade level were inadequate to meet the populations’ needs
- An alternative form of discharge instructions was needed
- Emergency nurses identified pictographs as an adjunctive method to provide home care instructions.

High volume diagnosis and discharge instructions were selected to be converted to pictographs; limited text written at less than a third grade level was included to enhance illustrations. Content of the pictographs were selected based on a review of the literature and current discharge instruction contents.

Available pictographs include:
- Fever care
- Abdominal pain
- Gastroenteritis
- Orthopedic conditions
- Asthma

At the completion of the ED visits patients received standard discharge instructions and the language-appropriate pictograph version. Quality and helpfulness of pictographs was determined by post-discharge phone calls by registered nurses. Positive post-discharge client feedback supports its efficacy. More pictographs are being developed.

**Conclusion**

Given the realities of a multicultural, limited literacy population, pictographs provide an effective method of improving and enhancing patient understanding and recall of discharge instructions.

**References**


