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.

Phase I: The Research Study

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.

Question	Incorrect			Correct		
The Newest Vital Sign Tool	English	Spanish	Total	English	Spanish	Total
If you eat the entire container how many calories will you eat?	27	46	73	44	33	77
If you are allowed to eat 60 grams of carbohydrate in a snack, how much ice cream could you have?	25	36	61	46	43	89
Your doctor advises you to reduce the amount of saturated fat in your diet. You usually have 42 g of saturated fat every day including one serving of ice cream. If you stopped eating ice cream how many grams of saturated fat would you be eating every day?	38	56	94	33	23	56
If you usually eat 2,500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?	47	70	117	24	9	33
Pretend that you are allergic to the following substances: penicillin, peanuts, latex gloves, and bee stings. Is it safe for you to eat this ice cream?	7	27	34	64	52	116
If patient answers no to the previous question then ask - Why Not?	8	24	32	48	36	84

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.

Phase II: The Intervention

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 visit 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.

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