An Edutainment Tool for Increased Compliance with DR Screening and Management: A KAP study

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Purpose

Objective
- To study the knowledge, attitudes and practices (KAP) of Hispanics with Type 2 Diabetes before and after an intervention involving a culturally competent educational fotonovela
- To ascertain the barriers to compliance with eye exams through focus group discussions with health care professionals and with Hispanic individuals at risk for Type 2 Diabetes.
- To design and implement a visually compelling, edutainment tool, a bilingual fotonovela, based on responses collected from the focus groups.

To design and implement a KAP survey instrument to field-test changes in subjects exposed to two versions of the fotonovela.

Background
- Hispanics in the United States, especially those who are Mexican American, suffer from high rates of eye disease and visual impairment [1, 2].
- A tool to increase compliance (Fig. 1) with annual eye exams and health lifestyle will yield significant cost-saving to the national health-care system.

Fotonovelas are a low-cost, graphic, inexpensive, immediate method for increasing awareness and intention to improve diabetes self-care management and compliance (Fig. 2).

Data
- 55 individuals were used for focus groups in Albuquerque, New Mexico and San Antonio, Texas. Of these, 20 were health professionals and 35 were Hispanics with Diabetes.

Methods

1) Focus Group Discussions
- 5 focus group discussions were held: 2 in New Mexico (Health care providers) and 3 in Texas (Hispanic individuals at risk).
- Twenty-five open questions were asked to the focus group participants on Type 2 Diabetes, Diabetic Retinopathy, fotonovelas and storytelling.

Resonant, repeating themes and cultural issues uncovered in the participant responses were used to develop the KAP survey and to develop the KAP survey.

Table 1 - 4 Sample of Focus Group Questions (health provider group questions in bottom section)

<table>
<thead>
<tr>
<th>Domain</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>How much have you heard of your diabetes under control?</td>
</tr>
<tr>
<td>DR &amp; Vision</td>
<td>How often do you have eye exams under control?</td>
</tr>
<tr>
<td>Fotonovela</td>
<td>Should the story be a tragedy, or one of redemption?</td>
</tr>
<tr>
<td>Diabetes</td>
<td>What is the best way to inform patients?</td>
</tr>
</tbody>
</table>

2) Fotonovela
- Based on the focus group responses (Results, Focus Groups) a script and storyboard were developed for a 32 page (16 Spanish, 16 English) bilingual fotonovela booklet (Fig. 2).

Results

1) Focus Groups
- Among the health-care providers and the Hispanic individuals at risk, there was strong agreement, demonstrated by the frequency of similar individual responses and by show-of-hands. Key responses included:
  - Information about Diabetes and Diabetic Retinopathy should be communicated in Spanish.
  - Fotonovelas, with its graphic visual methods was an ideal tool for Diabetic Retinopathy and other chronic diseases associated with Diabetes.
  - Strong, older male character was preferred as the protagonist.
  - A doctor should be the character to deliver the most potent messages regarding compliance.
  - Two story lines were needed: a redemptive story for the protagonist and a tragedy for a female character in a subplot.

Table 2 - Comparison of KAP scores for all subjects (N=20), Location (Mx, TX), and Preferred Language (Spanish, English, Bilingual) and Presence of Type 2 Diabetes or Pre-Diabetes.

<table>
<thead>
<tr>
<th>Question Type</th>
<th>All Subjects (1t)</th>
<th>Location (2t)</th>
<th>Preferred Language (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>.924 &lt; .001</td>
<td>Mx</td>
<td>NSD</td>
</tr>
<tr>
<td>Attitude</td>
<td>.817 &lt; .001</td>
<td>TX</td>
<td>NSD*</td>
</tr>
<tr>
<td>Practices</td>
<td>.916 &lt; .001</td>
<td>NSD</td>
<td>NSD*</td>
</tr>
</tbody>
</table>

2) KAP Survey Field Tests (pre- and post-exposure)
- A variety of KAP questions on Diabetes knowledge, DR knowledge, and practice were pre-tested on 2 small preliminary groups for comprehension, clarity of meaning and investigator bias [3].
- From the results of the pre-tests, 9 final questions were developed for the field-tests of the 16 page fotonovela and the 2 page fotonova.

Demographic data was also collected: age, gender, preferred language (English, Spanish, or Bilingual) and presence of Type 2 Diabetes or Pre-Diabetes.

Table 3 - Summary questions 10, 12 and 12 Do the correct answer.

<table>
<thead>
<tr>
<th>Question Type</th>
<th>All Diabetes (2t)</th>
<th>Women v. Men (2t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>&lt; .001</td>
<td>NSD</td>
</tr>
<tr>
<td>Attitude</td>
<td>&lt; .001</td>
<td>NSD*</td>
</tr>
<tr>
<td>Practices</td>
<td>&lt; .001</td>
<td>NSD*</td>
</tr>
</tbody>
</table>

Conclusions

The use of field testing for measuring fotonovela impact lead to the inclusion of 3 additional points in the booklet to emphasize the risk of vision loss even among those Type 2 Diabetics who practice rigorous self-care.

Statistically significant score improvement (p < .001) suggests that the fotonovela is a robust, low-cost tool for health education in underserved populations.

Acknowledgements

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