Implementation and Evaluation of a Low Health Literacy and Culturally Sensitive Diabetes Education Program (Poster)

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Implementation and Evaluation of a Low Health Literacy and Culturally Sensitive Diabetes Education Program
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Background
• Health literacy – degree to which individuals have the capacity to obtain, process, and understand basic health information and services to make appropriate health decisions
• 36% of adults (78 million people) have low or basic healthy literacy skills
• Diabetes self-management is complex, requiring knowledge and skills pertaining to diet, exercise, blood glucose monitoring, and medication administration
• Individuals with diabetes and low health literacy (LHL) have poorer glycemic control, higher rates of retinopathy, and more episodes of hypoglycemia

Objective
Evaluate the effectiveness of a LHL diabetes education program by measuring patients’ diabetes knowledge, self-efficacy, self-care, and metabolic control; and, patient, provider, and staff satisfaction.

Study Design
A prospective pre-post evaluation design was utilized to investigate the short-term outcomes over 12 months for patients who completed the culturally sensitive LHL diabetes education program.

Program Description
• Individual and group diabetes education sessions provided in English and Spanish, encompassing 13 hours of education over 12 weeks
• The U.S. Diabetes Conversation Maps were used for their visual approach to learning
• Individual and group diabetes education sessions provided in English and Spanish, encompassing 13 hours of education over 12 weeks

Demographics
• Over the 12 month evaluation period a total of 277 patients enrolled in the program, with 106 patients having complete survey data
• 77.4% of the patients were Hispanic, mostly Puerto Rican, living in the United States for 10 years or less, and preferred to speak Spanish
• The mean age was 56.8 (± 10.4 years) with 66% of participants female. Over 88% of the patients had Medicare or Medicaid; and 13.2% had no insurance coverage

Analyses
• Descriptive statistics were calculated as mean with standard deviation (SD) or frequency and percentage for categorical variables
• Change in diabetes knowledge was analyzed using the McNemar test for paired proportions. Pairs were determined by percent of patients who achieved and did not achieve a pre-determined knowledge score of 80% before and after the education intervention
• A1C, diabetes self-care behaviors, and self-efficacy were evaluated by comparing pre- and post-test mean scores using a paired t-test

Findings
• Over 12 months of the program, 191 patients enrolled in the program, with 106 patients having complete survey data
• 77.4% of the patients were Hispanic, mostly Puerto Rican, living in the United States for 10 years or less, and preferred to speak Spanish
• The mean age was 56.8 (± 10.4 years) with 66% of participants female. Over 88% of the patients had Medicare or Medicaid; and 13.2% had no insurance coverage

Medication self-care using the Summary of Diabetes Self-Care Activities tool (STOFHLA) tool and the diabetes knowledge using the Spoken Knowledge in Low Literacy for patients with Diabetes (SKILLD) tool
• A1C values from the hospital’s database
• Self-efficacy using the Stanford Diabetes Self-efficacy tool
• Diabetes self-care using the Summary of Diabetes Self-Care Activities tool

Conclusions
Results from the program evaluation were similar to other LHL-disease education studies. Significant improvements occurred in diabetes knowledge, self-efficacy, the diet, exercise, and foot care domains of self-care, and A1C for patients who completed the program. Importantly, improvements in diabetes knowledge were significant for patients with both adequate and inadequate health literacy.

Gave the relationship between LHL and poorer health outcomes and increased costs, health care organizations and providers need to take action to transform systems of care to address the literacy needs of patients.

To account for levels of health literacy, the composite SKILLD score was analyzed by adequate and inadequate health literacy strata. Patients were grouped into two categories based on the SKILLD score: inadequate health literacy (those with health literacy 63.2% of patients had adequate health literacy, with 11.3% of patients scoring in the marginal, and 25.5% of patients in the inadequate health literacy categories

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Table 1: Stratification by Literacy Level

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pre-Program (M±SD)</th>
<th>Post-Program (M±SD)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate Health Literacy (n=66)</td>
<td>14.17±2.15</td>
<td>16.06±2.77</td>
<td>&lt;0.001</td>
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<tr>
<td>Inadequate Health Literacy (n=39)</td>
<td>8.47±1.39</td>
<td>11.83±2.70</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Table 2: Self-care, Self-efficacy, and A1C

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Pre (M±SD)</th>
<th>Post (M±SD)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Self-care</td>
<td>3.0±1.5</td>
<td>3.3±1.4</td>
<td>&lt;0.001</td>
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<tr>
<td>Exercise</td>
<td>3.9±1.3</td>
<td>4.2±1.1</td>
<td>&lt;0.001</td>
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<tr>
<td>Blood Sugar Testing</td>
<td>4.2±1.2</td>
<td>4.6±1.2</td>
<td>&lt;0.001</td>
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<tr>
<td>Foot Care</td>
<td>4.0±1.2</td>
<td>4.3±1.1</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>4.4±1.1</td>
<td>4.7±1.2</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>3.7±1.2</td>
<td>4.2±1.2</td>
<td>0.001</td>
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</tbody>
</table>