Evaluating the Effectiveness of Physician and Clinical Pharmacist Patient Education and Disease Management in Diabetes Mellitus

Sotheavy Vann
Jackson-Hinds Comprehensive Health Center
Jackson, MS
• 26 million Americans have diabetes
• Mississippi ranked 2\textsuperscript{nd} highest in diabetes prevalence
• Diabetes cost is predicted to total $245 billion by 2020
  • 10\% of national healthcare spending
• Leading cause
  • Adult blindness, kidney failure, lower limb amputation, heart disease and stroke
• Diabetes complication is preventable!
Background

• Limited visit time with physicians
• Need for Patient Education
  • Goal: improve glycemic control, delay or avoid complications, increase quality of life, and keep treatment cost effective
• Diabetes Educator and Clinical Pharmacist - Dr. Joshua Fleming
  • Services: diabetes education, counseling, goal setting, medication management, and diet and exercise advisement
Methodology

A1c Collection
- Obtained a list of diabetes educator’s patients and their A1c record
- Decided parameters and identified patients who fit under parameters using EHR

Patient Satisfaction and Knowledge Survey
- Designed 14 question survey (5 satisfaction, 5 knowledge, 4 personal challenges to control diabetes)
- Surveyed patients who did and did not receive extra diabetes education at the Main and South clinics during visits by reading survey questions to patients
Results: Patient Satisfaction Survey

- HbA1c outcome shows improvement by a mean of -0.69% for patients after receiving extra diabetes education.
- Patients with extra diabetes education had higher satisfaction (4.6 out of 5) than patient without (4.2 out of 5).
- Patients with extra diabetes education scored only slightly higher on diabetes knowledge than patient without (81.2% vs. 78.7%).
- Data is not statistically significant.

<table>
<thead>
<tr>
<th></th>
<th>Mean Δ A1c (%)</th>
<th>Mean A1c (%)</th>
<th>Pt with decreased A1c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before Education</td>
<td>+0.97 (+0.15/month)</td>
<td>9.55</td>
<td>33 %</td>
</tr>
<tr>
<td>Baseline</td>
<td></td>
<td>10.52</td>
<td></td>
</tr>
<tr>
<td>After Education</td>
<td>-0.69 (-0.19/month)</td>
<td>9.83</td>
<td>67 %</td>
</tr>
</tbody>
</table>
Discussion

- Diabetes education and counseling by a clinical pharmacist helps improve A1c outcome and patient satisfaction and knowledge.
- Percent of A1c decreased after diabetes education is comparable to effectiveness of OAD and consistent with other self-management education studies.
- Other factors than diabetes knowledge alone led to improved A1c outcome.
  - Factors include accountability, financial assistance information, and drug management

Questions Raised
- What are the A1c outcomes of patients who only see physicians for diabetes management?
- Is diabetes education and counseling cost effective with clinical pharmacists?

Further Research Possibilities
- Increase size of study
- Case studies on patient with well controlled diabetes
- Evaluate effectiveness of social worker, CDA, nutritionist, and dietitian

Possible Tangible Results
- Patients learned correct diabetes facts after taking the survey
- Organized A1c record of 15 patients who received diabetes education for future use
Recommendations

- **Increase awareness** of diabetes education and counseling availability to all diabetic patients (Free!)
- **Utilize diabetes classes** provided by pharmaceutical companies (Free!)
- Form **diabetes support group** (Free!)
- **Emphasize** normal blood sugar ranges to patients
- Increase consistency of **A1c testing**
- Have **educational brochures** available in waiting and exam room
Conclusion

- Patient education helps with the control of diabetes
- Other barriers to good health such as finance and environment may negate the helpful benefits of diabetes education
- Free or low-cost resources are available for diabetes education that needs to be utilize to their maximum potential
Acknowledgements

Dr. Joshua Fleming
Dr. Jasmin Chapman
Dr. David Norris
Dr. Kimberly Smash
Ms. Eaine Hargrove
Dr. Debra Rice
Dr. Bob Hutchins
Mr. Tyrone Thigpen

Jackson-Hinds Comprehensive Health Center
Leaders and Staff