Low Cost Pharmacist-Directed Diabetes Awareness and Prevention Program Targeting Elementary Students
Molly J. Wascher, PharmD Candidate, Jessica Aiflen, PharmD Candidate, Karen L. Kier, Ph.D., BCPS, BCACP

Background
Diagnosed Diabetes Percentage - Hardin County, Ohio
2004: 7.9%; 1,827 cases
2011: 9.8%; 2,251 cases

Objective
• To provide a low cost interactive program aimed at educating third grade students on the basics of diabetes and the strategies to prevent the disease through nutrition and physical activity.

Methods
• Nonrandomized quasi-experimental pre-post intervention study
  ▪ Setting and Participants
    ○ All 3rd grade students at Ada Elementary School
    ○ Incorporated into Physical Education class curriculum
  ▪ Goal
    ○ Provide evidence to incorporate diabetes education and prevention techniques into elementary school curriculum
  ▪ Primary Outcome
    ○ Comparison of pre and post test results
  ▪ Program Design
    ○ Ohio Northern University IRB approved this study

Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There are two types of diabetes</td>
<td>71.83%</td>
<td>96.20%</td>
</tr>
<tr>
<td>2. Not having enough insulin can cause diabetes</td>
<td>64.38%</td>
<td>83.33%</td>
</tr>
<tr>
<td>3. Your body loves sugar, the more the better</td>
<td>78.38%</td>
<td>79.75%</td>
</tr>
<tr>
<td>4. Regular exercise and healthy eating habits can help prevent diabetes</td>
<td>82.19%</td>
<td>83.54%</td>
</tr>
<tr>
<td>5. Your body uses glucose as energy</td>
<td>51.35%</td>
<td>86.07%</td>
</tr>
<tr>
<td>6. You can catch diabetes from your friends like a cold</td>
<td>62.16%</td>
<td>79.75%</td>
</tr>
<tr>
<td>7. You should try to get 60 minutes of physical activity everyday</td>
<td>95.89%</td>
<td>96.20%</td>
</tr>
<tr>
<td>8. If given the choice, whole grain food is preferred</td>
<td>75.68%</td>
<td>86.08%</td>
</tr>
<tr>
<td>9. Physical activity cannot be with friends and cannot be enjoyable</td>
<td>81.08%</td>
<td>89.87%</td>
</tr>
<tr>
<td>10. You only need to eat food from 4 of the 6 food groups everyday</td>
<td>35.14%</td>
<td>32.91%</td>
</tr>
</tbody>
</table>

Pre-Test Percent Score: 69.81% (n=75)  
Post-Test Percent Score: 81.37% (n=79)  
Paired T-Test (two-tailed): P=0.001

Cost of the Program:
- Total: $15.76
- $0.21 per student

Conclusions
• Elementary school children are able to understand material on diabetes basics, nutrition and physical activity
• A low-cost interactive program is an effective mechanism to teach students the basics of diabetes and prevention techniques
• Pharmacists and student pharmacists are equipped to organize and implement similar programs across the country

Future Plans for the Program
• Update program based on lessons learned from spring 2014
• Repeat program with the same students as fourth graders
• Objectives:
  ○ To study the impact of providing continued education on diabetes and the strategies to prevent the disease through nutrition and physical activity to elementary school children through a low-cost interactive program.
  ○ To determine the ability of elementary school students to maintain knowledge of diabetes basics following an interactive program.
  ○ Demonstrate the importance of including continued diabetes education in elementary school curriculum.

Resources:
1. Adamo ER, Caprio S. Type 2 diabetes in youth: epidemiology and pathophysiology. Diabetes Care May 2011; 34 (2):161-165

The authors have no known conflicts of interest.