BEHAVIORAL ASPECTS OF POST-PRANDIAL SMBG USE IN TYPE 2 DIABETES

REAL WORLD STRATEGIES FOR ENCOURAGING ITS EVERYDAY USE

William H. Polonsky, PhD, CDE
October 27, 2006

whp@behavioraldiabetes.org
Poor Adherence to SMBG Recommendations

- Follows guidelines (< 50% of time)  
  - Insulin: 29.2%  
  - OHA: 32.8%  
  - Diet: 70.0%
- Checks < 1x/day  
  - Insulin: 32.3%  
  - OHA: 47.2%  
  - Diet: 76.7%

n = 369

Polonsky et al, in preparation
Motivation in Diabetes

• Almost no one is unmotivated to live a long and healthy life
• Poor self-care occurs when obstacles outweigh possible benefits
• There are major medical benefits in diabetes, but also many, many obstacles
• Recognizing and addressing obstacles is key to helping patients change
SMBG Obstacles

1. Financial constraints
SMBG Obstacles

1. Financial constraints
2. Depression
Depression

- Depression rates are 1.5 – 2.0x in diabetes
- Poor glycemic control
  - Compared to controls, elevated A1c 1.8 – 3.3%
- Depression makes it harder to initiate and maintain healthy behavior changes

Anderson et al, 2001; Nichols and Brown, 2003; Lustman et al, 2000; Rosenthal et al, 1998;
### Depression and SMBG

<table>
<thead>
<tr>
<th></th>
<th>Depressed</th>
<th>Not Depressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follows guidelines</td>
<td>54.2%</td>
<td>70.1%</td>
</tr>
<tr>
<td>(&gt; 50% of time)</td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>Checks ≥ 1x/day</td>
<td>48.7%</td>
<td>62.0%</td>
</tr>
<tr>
<td></td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

- *p < .05
- **p < .001

n = 522

Polonsky et al, in preparation
SMBG Obstacles

1. Financial constraints
2. Depression
3. Ease of use issues
   - Physical discomfort/pain
   - Lack of convenience ("What a hassle!")
   - Poor self-efficacy ("This is too complicated for me")
What are We Missing?
The Critical Obstacle: Perceived Value

- When SMBG doesn’t seem worth the effort
  - Not actionable (no plan for response to results)
The Critical Obstacle: Perceived Value

• When SMBG doesn’t seem worth the effort
  – Not actionable (no plan for response to results)
    • “I don’t know how to interpret these numbers, how to respond, or even how often to check”
The Critical Obstacle: Perceived Value

• When SMBG doesn’t seem worth the effort
  – Not actionable (no plan for response to results)
  – Not efficacious (actions don’t make a difference)
The Critical Obstacle: Perceived Value

• When SMBG doesn’t seem worth the effort
  – Not actionable (no plan for response to results)
  – Not efficacious (actions don’t make a difference)
    • “No matter what I do, results are always high”
    • “My doctor doesn’t look at, or respond to, my SMBG results”
The Critical Obstacle: Perceived Value

- When SMBG doesn’t seem worth the effort
  - Not actionable (no plan for response to results)
  - Not efficacious (actions don’t make a difference)
  - Too discouraging or shameful
The Critical Obstacle: Perceived Value

- When SMBG doesn’t seem worth the effort
  - Not actionable (no plan for response to results)
  - Not efficacious (actions don’t make a difference)
  - Too discouraging or shamefulful
    - “I don’t want to know!”
    - “When my numbers are high in the AM, I just feel bad about myself all day”
Treatment Efficacy: Reggie’s Tale

... thanks for your kind attention to my demise. The last time I visited an endocrinologist was about 4 years ago. My understanding of diabetes is rudimentary and my problems are rooted in my very first disappointing efforts to get it under control shortly after I was diagnosed in 1990. Whatever I tried simply did not seem to work. My BG’s were highly erratic and there seemed no correlation with what I ate, when I ate it, and at what time I ate it.
On occasion, I have taken matters very seriously and monitored my sugars religiously for 1 – 2 week periods. Each time I have been disappointed by the lack of logic in the BG readings, to the point where long ago I decided I was not going to become a human pin cushion sticking 4 needles into my body a day and then another 6 or 7 into my fingers to check my levels.
Treatment Efficacy: Reggie’s Tale

I have reduced my intake of insulin to thrice daily as opposed to 4 times daily. I have stopped testing altogether. I attempt to exercise control where I can, but I do have the occasional chocolate attack and throw caution to the wind. I am fully aware there will be consequences, but there doesn’t seem to be anything I can do.
Obstacles to SMBG

- Broad psychosocial/environmental factors
  - Financial constraints
  - Depression
- Ease of use
- Perceived value of SMBG
  - Not actionable (no plan for response to results)
  - Not efficacious (actions don’t make a difference)
  - Too discouraging or shameful
What To Do?

If post-prandial SMBG is worth the effort, but patients often do not follow recommendations (even for pre-prandial SMBG), what can we do to encourage SMBG use?
Strategies that Don’t Work

• Urging more willpower
  – “if you would just try harder…”

• Threatening bad outcomes
  – “you’ll go blind if you don’t do what I tell you to do…”

• The gift of advice
  – “maybe you need a smaller meter…”
Strategies that Do Work

- ADDRESS ENVIRONMENTAL OBSTACLES
- ENHANCE PERCEIVED EASE OF USE
- ENHANCE PERCEIVED VALUE
  - For providers
  - For patients
Strategies that Do Work

- ADDRESS ENVIRONMENTAL OBSTACLES
- ENHANCE PERCEIVED EASE OF USE
- ENHANCE PERCEIVED VALUE
  - For providers
  - For patients
Strategies that Do Work

- ADDRESS ENVIRONMENTAL OBSTACLES
- ENHANCE PERCEIVED EASE OF USE
- ENHANCE PERCEIVED VALUE

- For providers
- For patients

Focusing on post-prandial SMBG use provides us with a potentially valuable opportunity.
When SMBG Feedback is Motivating, Not DE-motivating

- Provides summary data that is simple/clear, and not overwhelming
- Frames a positive, hopeful message
- Promotes action, rather than paralysis
- Stimulates interest in obtaining more results
Strategies for Providers

Making the SMBG recommendation

a. Be precise and clear regarding directions
   • “check twice daily: every morning, right before breakfast and then 2 hours later.”
Strategies for Providers

Making the SMBG recommendation

a. Be precise and clear regarding directions
b. Ask the patient to consider how this new task will fit into their daily life
   • “tell me how you will accomplish this tomorrow morning.”
   • The power of implementation intentions

Sheeran and Orbell, 2000
Strategies for Providers

Making the SMBG recommendation

a. Be precise and clear regarding directions
b. Ask the patient to consider how this new task will fit into their daily life
c. Provide a rationale that will be personally meaningful to the patient
   • “Let’s find out how breakfast affects you”
   • “Let’s find out whether your current regimen is working and keeping you in a safe place.”
Strategies for Providers

Responding to SMBG results

a. Look at them! (see forecast letter)
Strategies for Providers

Responding to SMBG results

a. Look at them!
b. Congratulate

• “This is great that you’ve been checking.”
Strategies for Providers

Responding to SMBG results

a. Look at them!
b. Congratulate
c. Challenge self-worth interpretations

• “There are no good or bad numbers. This is just information, and all of it is valuable.”
Strategies for Providers

Responding to SMBG results

a. Look at them!
b. Congratulate
c. Challenge self-worth interpretations
d. Provide guidance in interpretation

• “The question to ask of these data is not ‘am I ok?’, but ‘is what I am doing working?’ Let’s find out.”
Strategies for Providers

Responding to SMBG results

a. Look at them!
b. Congratulate
c. Challenge self-worth interpretations
d. Provide guidance in interpretation
e. Provide guidance in promoting action

- “The most important question to ask when looking at SMBG results is, ‘what, if anything, should I do about this?’”
Strategies for Providers

“For the first time, we can now see how supper affects your blood sugars. Let’s devise some small changes and see if that makes a difference.”
Potential Methods to Promote Perceived Value

- Meter-based interventions
- Data downloads
- New diabetes education programs
- Interactive workbooks

- The use of non-physician providers is likely to be critical
Take-Home Messages

• Everyone would prefer to live a long, healthy life
• Patients are *not* unmotivated to manage diabetes effectively
• SMBG is important, but adherence is suboptimal.
• The problem is that patients face many obstacles to regular SMBG
  - *Broad psychosocial factors*
  - *Ease of use can be problematic*
  - *Perceived personal value*
Take-Home Messages

• Take hope!
• We can help our patients to engage in regular SMBG use.
• Indeed, SMBG use (especially when it includes post-prandial SMBG) can encourage better self-care.