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Diabetes immersion in a pre-clinical endocrine course

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Introduction:

During our pre-clinical Endocrine course we designed an exercise during which 220 medical students experienced the complexities of living with diabetes mellitus.

The purpose of this 2 day experience was to expose students to the personal impact and challenges of participation in common core diabetes self-management activities and to enhance their understanding of social-behavioral factors that impact patient adherence to their treatment regimen

Objectives:

1) To foster student awareness of the challenges inherent to quantitative dietary assessments, assessment of their own dietary behaviors, and understanding of the impact of dietary changes commonly recommended as part of a treatment plan for diabetes mellitus.

2) To experience the challenges and impact of incorporating blood glucose monitoring and insulin injections into daily activities.

Methods:

Students were provided basic instruction on a carbohydrate-restricted diet and resources that can be used to estimate the carbohydrate content of their meals, snacks and beverages. To mimic clinical scenarios experienced by many patients with diabetes who do not receive recommended nutrition education, they were not provided with detailed nutritional information. Instead, they were advised to find information about diet composition using tools widely available on the internet. Students were asked to complete a detailed log of their usual dietary intake for one day.

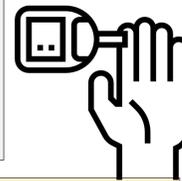
Subsequently, they were asked to follow a carbohydrate restricted diet for 2 days – consuming no more than 60 grams (g) of carbohydrates per meal and a total of less than 180 g of carbohydrate daily. Students were provided glucose monitors and asked to monitor blood glucose before each meal and at bedtime.

Finally, they were provided insulin syringes and saline (to simulate insulin) and instructed on basic injection techniques. They were placed on a standard basal dose of “insulin” (saline) to be administered once a day and asked to inject “insulin” with meals based on their carbohydrate intake.

Methods:

Following the 2-day simulation, students wrote a reflective essay on the experience, addressing the following questions:

1. How hard was it to identify the carbohydrate content of foods and beverages you commonly consume? Was it difficult to limit your total daily carbohydrate intake to 180 g a day and 60 g per meal?
2. What changes did you need to make to your normal eating patterns to meet these goals?
3. Was it difficult to incorporate these requirements into your daily routine? How difficult do you think it would be to have to follow this routine? What was the hardest part of this experience – the diet, finger stick glucose, or injecting insulin?
4. What barriers did you experience that prevented you from adhering to your “treatment” plan?
5. How will this activity affect how you care for patients with diabetes?



Student comments:

“I felt like diabetes was really starting to define my life. Instead of enjoying food, I started to resent eating as my allotted 60 grams of carbs were disappearing. ...It may have been less burdensome if I were eating more balanced meals, but it was like I had blinders on and all I focused on was the carbs. ...I was focusing a lot of my thoughts on food and it was actually preventing me from being productive. But worse than the dietary restrictions, was the needles. I would wake up in the morning and lay in bed not wanting to prick myself. I would load the lancet and just stare at it. I would fill the syringe with saline and become intentionally distracted by other things. I think I hated the finger stick slightly more than the diet and the insulin, but I resented all of it.”

“The diabetes immersion experience has left me with appreciation and respect for the daily struggle encountered by diabetic patients. Altering a well-established routine is no easy task, and even less so when the changes are unpleasant or frustrating. Dietary tracking, monitoring blood glucose, and injecting insulin are laborious, time consuming, and disruptive to one’s daily flow of activities.”

Student comments:

“If I were to rate the hardest parts of the experience on a scale of 1-10, I would have to say the diet and finger stick would tie for the lead at 10 (being the most challenging, onerous, and nearly impossible) ... carrying around the supplies and trying to be discreet when in public was definitely a challenge. The act of intentionally subjecting oneself to such a tiny but vicious prick was vehemently objected to by my mind. It actually took the help of another person for the first couple times so that I could be semi-prepared to prick myself. ...If I were to have to follow this routine for a longer length of time, I would be the most noncompliant diabetic my doctor would ever see. ...I would give up the first time a set routine were to be broken due to unexpected curve balls life throws at you. And you know life really does love those curve balls. “

“...identifying the carbohydrate content of the food I ate was extremely difficult. ... as someone who eats a lot of rice and fruits, limiting my daily carbohydrate intake to 180gm a day was nearly impossible. It seemed as though every little morsel I ate added on to ...food I wasn’t supposed to eat. I had to go purchase more greens and protein so that I could survive off the dietary restrictions. During my studies, I found myself struggling with headaches due to the restricted caloric intake We students subsist off of sandwiches, pizza, pasta,To meet the dietary goals of a diabetic, my entire subsistence would have to change. I would have to spend more money, eat out less often, go grocery shopping more often ...”

Discussion:

Diabetes immersion gave students the opportunity to experience the difficulties of managing a chronic disease such as diabetes mellitus. Based on their reflective essays they found incorporation of blood glucose monitoring and insulin injection into their daily routine challenging. In addition, many students found the dietary restrictions problematic and expensive.

Conclusions:

1. Simulation of the patient experience can give students a unique perspective on the impact of social-behavior factors on management of diabetes mellitus.
2. In the future we hope to further evaluate whether this experience has an effect on student empathy toward patients with diabetes mellitus.