

A Novel Diabetes Elective Course for Pharmacy Students

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BACKGROUND

Diabetes is a complex chronic disease that requires patients to make drastic lifestyle changes and healthcare professionals are expected to guide their patients through these changes. In order for diabetes treatment to be successful, healthcare professionals need to convey more than just an understanding of the pathophysiology and pharmacotherapeutics of the disease. In fact, due to the many components related to diabetes and time constraints, certain topics such as mental health, and/or psychosocial/cultural aspects, can be easily overlooked or not mentioned in a pharmacy therapeutics course. The purpose of the Diabetes Immersion elective course was to expand Jefferson College of Pharmacy (JCP) students' knowledge on diabetes looking past treatment algorithms and focusing on the patient's perspective. The course was designed to provide the students with the opportunity to learn advanced knowledge of diabetes through active learning.

COURSE DESCRIPTION & OBJECTIVES

The Diabetes Immersion elective is a 2-credit hour course offered to pharmacy students in their 3rd year of pharmacy school.

1. Demonstrate empathy regarding the impact of diabetes on everyday life.
2. Demonstrate the ability to monitor blood glucose, count carbohydrates, inject "insulin", and adjust insulin dose based on daily experiences.
3. Discuss the impact of mental health and sociobehavioral/cultural aspects on diabetes.
4. Develop and provide diabetes education to the community.

COURSE OUTLINE

Week	Lecture/Activity
1	<ul style="list-style-type: none"> Course orientation Overview of diabetes educator credentialing Diabetes review
2	<ul style="list-style-type: none"> No class
3	<ul style="list-style-type: none"> Insulin dosing (including carbohydrate to insulin ratio, correction factor)
4	<ul style="list-style-type: none"> Exercise and diabetes
5	<ul style="list-style-type: none"> Medical nutrition therapy
6	<ul style="list-style-type: none"> Insulin injection & glucometers Preparation for diabetes experience
7	<ul style="list-style-type: none"> No class
8	<ul style="list-style-type: none"> Mental health and diabetes
9	<ul style="list-style-type: none"> TBD
10	<ul style="list-style-type: none"> Discussion of diabetes experience
11	<ul style="list-style-type: none"> No class
12	<ul style="list-style-type: none"> Sociobehavioral/cultural aspects of diabetes
13	<ul style="list-style-type: none"> Diabetes and pregnancy
14	<ul style="list-style-type: none"> No class- Thanksgiving
15	<ul style="list-style-type: none"> Discussion of diabetes experience week, visit to dialysis unit, DISH, and Diabetes Fair

Diabetes Fair: Friday, November 3rd OR Friday, November 10th from 9am-12pm

*TBD: Attempted to schedule a type 1 diabetes patient to come to talk to the class.

COURSE ACTIVITIES

- Diabetes Experience
 - Students participated in a week long experience of living with diabetes
 - Students were provided with or required to purchase supplies consisting of a glucometer, test strips, disposable lancets, sharps container, insulin syringes, vial of normal saline, and glucose tablets
 - Students were required to check their blood glucose level and inject normal saline four times a day for 7 days
 - When the students checked their blood glucose, they also drew an "assigned" blood glucose value out of a bag; this value was used to calculate the insulin dose
 - Students kept a log of their actual blood glucose values, their "assigned" glucose values, amount of carbohydrate eaten at a meal, insulin dose given, and diary entry
 - Students wrote a reflection paper on the experience
- Dialysis unit visit
 - Students were to schedule a 1-2 hour visit to a dialysis unit. At this visit, they were to shadow a dialysis nurse and interview a dialysis patient
 - Students were to write a reflection paper on the experience
- DISH visit
 - Students attended one shared medical visit session ("DISH: Diabetes Information and Support for your Health") at the Jefferson Family Medicine Associates
 - Students wrote a reflection paper on the experience
- Diabetes Fair
 - The class was divided into 2 groups
 - Each group put together a diabetes fair to provide diabetes education to the community
- Course overview reflection paper

CHALLENGES & OPPORTUNITIES

- Dialysis unit visit
 - CHALLENGE: Due to communication issues, the students were unable to visit the dialysis unit
 - OPPORTUNITY: Students were asked to watch a movie that featured diabetes in some manner and to reflect on the diabetes aspect of the film
 - Discussed the movies and reflections in class
 - Some movies watched:
 - *Con Air*
 - *Fed Up*
 - *Half Baked*
 - *Memento*
 - *Steel Magnolias*
- Class cancelled due to unforeseen circumstances of the speaker
 - CHALLENGE: Missing out on very important information regarding mental health and diabetes
 - OPPORTUNITY: The type 1 diabetes patient was not able to be scheduled for the TBD date; the mental health and diabetes topic was re-scheduled

SELECTED STUDENT COMMENTS

"This course reminded me of the need to be empathetic with patients and understand the patient's perspective of diabetes."

"...the diabetes experience exercise, where we had the opportunity to delve into the life of a patient living with type 1 diabetes, helped us better empathize with diabetic patients and understand the struggles they have to through each and every day. This assignment definitely changed the way I viewed patients with diabetes as a whole (in a much more positive light)..."

"Overall, diabetes immersion may be one of the most important classes I have taken in pharmacy school so far because of its relevance and importance. This is the first class where I feel like I understood the full scope of the disease, rather than just the medications."

"It is often difficult to truly empathize what a patient goes through when having check their blood sugar, injecting themselves with insulin, monitoring their diet, and trying to live a normal healthy life. The diabetes experience gave me a window into their lives, which in turn, will make me a better clinician."

"I had an idea that diabetes impacted multiple aspects of a person's life but gained a better understanding of the impact through this course..... Now, I have a more well-rounded tool kit when I interact with patients and my own family, and can offer empathy instead of sympathy."

"This class has provided me with a larger background into understanding the complexity of diabetes. This disease state not only affects the physical body, but it effects and is effected by the social, emotional and environmental aspects of the patient. I think my key take away from this class is that as a health care provider, you have to become a detective. As a detective, you learn to understand the patient. You learn what is going on in the patient's life from their social life all the way to their mental health. Understanding reduces frustration with the patient as to why they aren't taking their medications or eating properly. Understanding the patient helps create compassion and I want to be a compassionate health care provider."

"I was previously so focused on the drug therapy before taking this course. I often hear, 'treat the patient, not the disease' and this rings so true after completing the class. Diabetes affects patients in basically every aspect of their lives – physically, emotionally, psychologically, financially, behaviorally, sociologically, etc. Knowing this will hopefully adjust my approach to helping manage patients' diabetes. I am very grateful for having been a part of this course."

"I feel more empowered to make an impact on the lives of patients..."

FUTURE DIRECTIONS

- Make the course **interprofessional**
 - Incorporates the benefit of having other healthcare professionals' perspectives and working as a healthcare team
 - Opportunity for other healthcare professionals to immerse themselves in learning more about caring for patients with diabetes
- **Incorporate a field trip** the grocery store led by a registered dietician
- Bring in patients with type 1 and type 2 diabetes into class to discuss the **patient perspective**
- Watch the movie **Fed Up** as a class and discuss

REFERENCES

- Ahola AJ, Groop PH. Barriers to self-management of diabetes. *Diabet Med.* 2013;30(4):413-20.
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- Wesberg SM, Bumgardner MA, Brown MC, Frueh J. Impact of an elective diabetes course on student pharmacists' skills and attitudes. *Am J Pharm Educ.* 2010;74(3):49.