

Learning and Living Diabetes: Development of a College Diabetes Seminar Course

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Background

For students pursuing a college degree in a health-related field, understanding the treatment and self-management of a chronic health condition may contribute to a more favorable educational outcome through use of active learning strategies such as case studies and immersion experiences.^{1,2} For example, Sandstrom¹ described the use of three case studies that presented vignettes and student exercises about living with diabetes, management of the disease under various complex situations, and diabetes-related decision-making. The author found that completion of the course gave nursing students a clearer understanding of the disease being studied, its effect on clients, and various client needs and responses to the disease.

Self-management of diabetes during the transition from high school to college can be difficult. For example, Mellinger³ identified situations that students with chronic health problems such as diabetes face as they prepare for and adjust to life at college. In preparation for college, the identification of a primary care provider in the new location was crucial, as was the transfer of medical records to that provider and coordination of health insurance plan details.

Mellinger recommended that students, on arrival at college, disclose their chronic condition to a roommate or hall advisor and walk through the cafeteria, encouraging the posting of nutritional information. The on-campus resources of the federally mandated disability center may also be a valuable resource. An appointment with a health care

provider at the student health center should be made shortly after arrival on campus, and students should also identify emergency health services, pharmacies, and support groups.

Although immersion experiences for college students have been reported in the literature, there is little in the literature about teaching health professional students specifically about this difficult transition period for management of the disease. Additionally, little is known about possible peer advocacy or about the future management skills that increased sensitivity to living with the disease could yield. This article aims to fill this gap by describing the development of a course designed to increase students' sensitivity about what it is like to live with the disease in an effort to develop future advocacy and diabetes management skills.

Course Description

One college student who successfully mastered the transition from high school to college and recognized the challenges for young adults living with diabetes approached several university faculty members requesting the development of a course to educate, inform, and practice strategies that promote adaptation to independent living for those affected by diabetes. Faculty from nursing, medicine, and nutrition/health promotion accepted the challenge, thus forming a teaching team of three faculty members (one of whom is a certified diabetes educator) and an undergraduate student.

The University of Alabama has 28,000 students and offers an excellent opportunity for faculty

to develop freshmen seminars for students to pursue specific interest areas. These seminars are not limited to first-semester students, but are typically tailored for that population. The authors obtained authorization from the university to offer a seminar titled “Living with Diabetes.” As a benefit to students, the three-semester-hour course was designated as a social behavioral science course, which would meet core curriculum requirements within the university, thus counting toward completion of a degree.

The seminar course was originally created for students with diabetes, particularly type 1 diabetes, which is still the most prevalent type of diabetes on college campuses. The undergraduate student consultant who envisioned the course assisted with identification of content, personal experiences, and recruitment of students into the course. Students were recruited by posted flyers at freshman orientation, in the student health center, on the online registration Web site, and in the Office of Disability Services, as well as by word of mouth. However, after students enrolled, none self-identified as living with diabetes. The faculty quickly adapted the focus of the course to developing an appreciation for the complexities of life with diabetes for college students and other adults.

The class met two afternoons each week for a total of 3 hours during 15 weeks. Table 1 provides a summary of the course objectives. The teaching team developed the content into seminar discussions that were dependent on student participation. Expectations for successful course completion were identified, and weekly assignments were created to challenge the students.

The teaching team incorporated basic information-sharing and skill-building to the course by assuming that enrolled students had no background knowledge about diabetes. The Diabetes Knowledge Test⁴ was administered to students at the beginning of the course. Initially, students were required to prepare personal goals for knowledge to be gained from the course. These goals

Table 1. Course Objectives

- On successful completion of the course, students will be able to:
1. Identify potential problems in the transition to university life for those living with diabetes
 2. List campus resources to prevent emotional problems during the transition
 3. Describe criteria useful in selecting a health care provider
 4. Evaluate resources on campus for healthy diabetes self-management
 5. Relate the advantages of professional organization membership
 6. Describe strategies for politically empowering people with diabetes
 7. Report current trends in research and technology related to diabetes self-management

assisted the teaching team in tailoring the seminars to meet students’ needs. Each week, students were required to submit a short synopsis of their week as a university student who may be living with diabetes, reflecting the level of accomplishment of their personal goals and including academics, social life, exercise/activity, and nutrition.

Students were required to prepare two references with a short summary of each reference that related to the topic of the day. Students were expected to be prepared to discuss these references in class. No textbooks were required in the course; Internet resources served as the primary learning resource, guided by criteria for evaluation of Web sites.

Guest speakers and field trips across campus helped students learn

about campus resources. The student consultant facilitated discussions about advocacy and legal challenges facing people with diabetes and provided insight about cutting-edge technology such as insulin pumps and continuous glucose monitoring devices. Prevention of problems facing all college students was addressed in discussions about alcohol and substance abuse, sexual health, and eating disorders. Table 2 provides a summary of the topical areas covered in the course.

One strategy used previously by a member of the teaching team in a research study was effective in helping students learn the complex, time-consuming nature of diabetes.⁵ Near the end of the course, when students had learned the varied components of self-management,

Table 2. Topical Outline

- Introduction to living with diabetes
- Making the emotional transition
- Selecting health care providers
- Nutrition and physical activity for college students
- Eating disorders common to people with diabetes
- Alcohol and substance abuse
- Physiology of diabetes
- Sexual health
- Traveling with diabetes
- Sick-day management
- Prevention of complications
- Professional organizations
- Stress and time management
- Volunteerism
- Pharmacology
- Emerging trends in research and technology
- Politics and advocacy
- Genetics and reproduction

the opportunity was provided to experience “Life with Diabetes” for 2 days. All students were provided with glucose meters and taught to use them. Foot care was reviewed, as was carbohydrate counting and exercise monitoring. Students were asked to record their blood glucose, food intake, exercise, foot exam results, and emotions during 1 weekday and 1 weekend day. They were reminded of the importance of keeping the meter with them at all times. Table 3 provides another sample of an experiential exercise useful for college students planning to travel.

Formal tests were not incorporated into the course because the faculty wanted to focus on behavior change and application of knowledge. A course evaluation based on the content and didactics was given to each student on completion of the course and was administered during a social event outside of the regular class schedule.

Student Participation

A total of eight students enrolled in the course, and none self-identified as having diabetes. Seventy-five percent of students enrolled were

pursuing a degree in nursing, with the remaining students seeking degrees in engineering and business. Seven of the eight students enrolled were freshmen. The majority of the students enrolled because health care was their major (nursing), and the remainder had family members with type 2 diabetes and wanted to learn more about the disease. Scores on the Diabetes Knowledge Test validated the assumption that these students had minimal knowledge about diabetes.

Many of the immersion activities made students aware of the chal-

Table 3. Traveling Exercise

- You and your friends decide to go to Gulf Shores for Midterm Break. You begin packing Wednesday evening for the trip Thursday morning. You have type 1 diabetes. What do you need to take on the trip?
- Thursday morning you wake up late, and your friends tell you to just meet them at the beach. Now you will need to drive by yourself. Amidst the rush, you forget to take your insulin, and just grab a Pop-Tart and jump in the car. About 50 miles down the two-lane road, you get hungry and eat your Pop-Tart. You then realize you forgot to check your blood glucose. You try to check your blood glucose while driving, run off the road, and have a flat tire. You still have not checked your blood glucose, and you are in the middle of nowhere with no signal on your cell phone. Frustrated, you decide to change the tire yourself. You get the spare out and take the flat tire off when you begin to feel “funny.” This time, you know you must check your blood glucose. What do you expect your blood glucose to be? How will you treat this blood glucose?
- Finally, you arrive at the beach for your long-awaited vacation. You meet your friends for lunch and have a cheeseburger and fries. How many carbohydrates did you consume in this meal? What do you expect your blood glucose to be at this time?
- As day turns into evening, you and your friends have a few drinks and then decide to walk along the beach. Although you know you shouldn’t, you decide to go barefoot because the warm sand feels so good between your toes. You are a bit wobbly because you have had a bit too much to drink. What do you expect your blood glucose to be at this point? You play a game of beach volleyball and drink some more.
- Your friends become rowdy, and the police come to explore the noise. All of you are arrested for public intoxication and taken to jail. You are very sleepy by this point, and, although you don’t feel drunk, you don’t feel good. You don’t have any supplies with you, but you just want to sleep.
- Mid-morning: all of your friends have been bailed out of jail, and one of your friends comes to get you. You can’t wake up and can’t remember what happened the night before. You know you need to check your blood glucose, but you suddenly realize you are in jail, feel sick, and don’t know what to do. Now you know why your mother wanted you to tell your college friends you have diabetes. You are frightened and just want to go home. At that moment you feel something warm and sticky on your foot. Looking down, you realize you have cut your foot sometime during the night, and it is bleeding.
- A friend bails you out of jail, and you immediately go to the condo and check your blood glucose. It is _____. You take a shower and know you need to treat your foot. What treatment is best for a foot injury?
- You decide you have made a total mess of your weekend and tell your friends you have diabetes and probably need to go to the hospital. Your friends are scared and don’t want any more trouble. They drive you to the hospital and leave. What next? What will your treatment for your blood glucose entail in the hospital? How about your foot?
- Finally, it’s Tuesday morning, and you are released from the hospital. Your family had to travel to care for you, and you have missed 2 days of class. You reassure your parents that you are able to drive home and become a responsible young adult. You finish your lunch in the hospital and begin the long drive back to school. This time you check your blood glucose first and bolus with lispro (Humalog) insulin before the trip. Unfortunately, you have no snacks with you, and you once again encounter a delay and are forced to sit in traffic for 3 hours. You check your blood glucose, and it is _____. You have your insulin and a diet soda. What do you do? Your foot is hurting, and you want to take one of the pain pills they gave you in the hospital, but you remember you were told not to take the pain pill when driving. You think, “How did I ever get into this mess?”
- After another 5 hours, you finally arrive back on campus and vow you will never repeat this experience.
- Where did you go wrong? How could you have prevented all of these problems?

allenges encountered by their peers living with diabetes. For example, in conducting the exercise of monitoring their blood glucose during the day, students found it challenging to include their monitoring materials in the large book bags they routinely carried across campus. Several struggled to “stick” themselves and were told if they could not tolerate actually checking their blood glucose to proceed through all motions except the actual stick.

The students were surprised by the amount of time required to “live with diabetes” and monitor every life activity with the constant thought of “How will it affect my diabetes?” They related the value of the exercise and committed to a lifestyle that could prevent or delay the onset of diabetes if possible. All students evaluated each learning experience throughout the semester and gave positive evaluations throughout.

Lessons Learned

This pilot course was originally designed to provide a bridge skill-building and empowerment experience for young people diagnosed with type 1 diabetes in self-management of the disease while making the transition to college life. The fact that the course concept came from a college student who has experienced the transition of living with diabetes is significant and probably adds to the uniqueness and functionality of the course. One crucial factor overlooked by the course developers was the realization that new students with diabetes want to be new students, not students with diabetes. In their transition to independent living as college students, none of the estimated 35 freshmen with diabetes enrolled in a course that would teach them more about life with diabetes. The exact reasons for this are not known.

Despite the fact that no students enrolled were self-identified as living with diabetes and that the number of students enrolled was low, the potential impact of the course is significant for a number of reasons. First, because courses that allow for an immersion experience of students living with diabetes and also focus on the transition period from high

school to college are not well documented in the literature, this article describes a unique and innovative approach to educating and empowering a very specific audience around a very specific topic. The immersion portion of the course appeared to increase the sensitivity of students to the challenges of diabetes management for their college peers, as well as for relatives and friends. All students identified their personal affiliation with people living with the disease (i.e., parents, siblings, a boyfriend or girlfriend, classmates, or other relatives or friends). This type of education may help in the development of peer advocates and peer leaders who can assist in self-management of people living with the disease in the college setting. This experience could also be significant for students in the health professions, who may eventually manage patients during this transition period. The course could lay an important foundation for more efficiently assisting those patients, as well as for empowering faculty to become involved in training additional students in health-related disciplines.

The other significance of a course such as this one is that the course design could be translated into diabetes education and management within clinical settings. Many diabetes educators work with either children or adults, and the transition from childhood (adolescence) to adulthood and independent living is tumultuous for all, regardless of whether the person has diabetes. Diabetes educators working with those leaving home and moving away to college can encourage parents and adolescents to inquire about courses such as this at the educational institution. Diabetes educators can also use strategies such as the traveling exercise (Table 3) with college-bound people with diabetes or others to illustrate the consequences of poor choices. Diabetes educators working with families may want to offer a “life with diabetes” experience for family members to help them understand what their loved one experiences daily. The teaching team was fortunate enough to have 15 weeks to educate these students, in

contrast to the maximum 10 hours allotted to diabetes educators for those newly diagnosed with diabetes.

Learning about diabetes beyond the walls of a diabetes educator’s office requires resourcefulness in seeking opportunities. This unique and innovative approach could serve as a model, not only for assisting those living with diabetes during this important transition time, but also for empowering college students, especially health professions majors not living with the disease, to become peer supporters and better clinical managers of the disease in the future.

Acknowledgments

The authors thank Kerry R. Lewis and Leslie Zganjar, staff members of the University of Alabama Institute for Rural Health Research, who assisted in preparation of this article. They also thank the students who participated in this pilot course.

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