Perceptions of How the Transition From Home Life to College Life Affects Type 1 Diabetes Management

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An estimated 7,700 freshmen with type 1 diabetes enter college every year (1). Challenges that arise with regard to diabetes self-management increase the need to support this population during the transition from home life to college life. Management of diabetes is important not only to prevent physical complications resulting from high blood glucose levels, but also to address psychological issues. According to the American Diabetes Association (ADA), people with type 1 diabetes are more likely than those without diabetes to experience depression, which can cause disruptions in sleep behavior, difficulty concentrating, and a decrease in energy (2). Students suffering from these symptoms may have a hard time maintaining high academic performance. Forms of support for these students include emotional support, assistance from medical professionals, and available campus resources.

First-year college students must learn how to cope with new academic challenges and the psychosocial expectations of higher education (3). Developing psychosocial identity involves living up to social expectations, identifying one's purpose, and maintaining stability through hormonal changes (4). The ADA's *Standards of Medical Care in Diabetes—2017* (5) recommends that "diabetes self-management education and support should address psychosocial issues, since emotional well-being is associated with positive diabetes outcomes." This emphasis on support of psychosocial well-being points to the importance of providing assistance to first-year college students with diabetes as they enter a crucial milestone in the development of psychosocial identity.

The potential vulnerabilities inherent in teens' transition to adulthood elicit the need for both pediatric and adult health care teams to be involved in the provision of support and assistance with resources (5). Students' ability to cope with their diagnosis of diabetes and self-management while going to school has been the focus of many research studies (6–13). However, there is a dearth of literature focusing specifically on young adults moving from home to a residential college campus. Thus, there is a need for further research examining late adolescent health behaviors during the transition from home to college.

A study by Wilson (4) explored the experiences of young people managing type 1 diabetes while in college and concluded that young people have difficulties with diabetes self-management at college because of psychosocial issues and may experience barriers in transitioning from pediatric to adult diabetes care providers. The author identified the need for a more seamless transition for students with type 1 diabetes from pediatric clinics to adult clinics while in college. A qualitative study investigating the successes and barriers experienced by first-year college

students regarding their type 1 diabetes management may provide insight into the educational and support needs of these students.

The purpose of this study was to describe the perceptions of first-year college students with type 1 diabetes regarding how the transition period from living at home to living independently at college affected their diabetes management. The study addressed the following research questions: *1)* How has the transition of medical care affected diabetes self-management? *2)* How have university resources affected glycemic control? and *3)* What issues with diabetes affect psychosocial identity during the transition from living at home to independent living in a college residence hall?

Methods

Sample

Participants were recruited with electronic flyers sent through a campus research email list of the student population at a large, public Midwestern university. In addition, flyers were posted in the building that housed the student health and student counseling services. Participants were required to be college freshmen ≥18 years of age who lived in a campus residence hall, had a formal diagnosis of type 1 diabetes, and were fully dependent on insulin for blood glucose control.

Procedures

Participants contacted researchers via email to express interest in the study. One-on-one semi-structured interviews were conducted with each participant who gave permission for audio recording. The study was approved for research involving human subjects by the university's institutional review board. No names were used during the 20- to 30-minute interview sessions. The interviews took place in a private office located on campus to ensure confidentiality and privacy. Each participant received a $50 gift card upon completion of the interview as compensation for time and participation.

Instrument

A question guide was adapted from a previous qualitative study (4). This tool provided structure and consistency for the semi-structured interview, which allowed for more systematic data collection. Throughout the interview, follow-up questions were added as needed to provide clarification or expand on responses. The interview questions addressed changes participants had experienced in diabetes management after moving into residence halls, barriers they faced with diabetes care, the medical professionals and campus resources with whom they worked, and the psychosocial identity barriers they experienced.

Data Analysis

Audio recordings of the interviews were transcribed verbatim. A grounded theory framework was used to analyze the transcriptions (14). Three levels of coding were employed in sequential order to identify themes. Each transcript was analyzed individually using open coding (15). Participants' answers to questions were analyzed together to identify similarities and differences in responses. The concepts were then used to identify themes based on the axial coding method (14). Finally, selective coding was completed to determine the most pertinent themes. This form of qualitative analysis provided a better understanding of the experiences of participants based on their personal perspectives and in their own words.

Results

The study included first-year college students, of whom 4 (31%) were male and 9 (69%) were female. Participants ranged in age from 18 to 22 years. Participants had been diagnosed with type 1 diabetes between the ages of 13 months and 13 years.

Several themes emerged regarding resources that aided students in maintaining glycemic control. These are discussed below.

Transition in Medical Care

Many participants reported not experiencing any change in medical care since the transition to college and were still under the care of their original endocrinologist, whether that physician was a pediatric or adult provider. Among the older participants, a change in care providers occurred at the age of ~20 years. Few participants reported transitioning to an adult provider before moving to college.

Difficulties were reported in making and keeping appointments with the physician because of schedule changes and traveling challenges. One participant noted, "I have to take a bus back home for my appointments, and working with my schedule and the bus schedule is a challenge." Many, however, traveled to their home cities during school breaks for appointments and reported having no difficulty in scheduling around the school calendar. Some participants reported traveling home, in trips that took multiple hours, to get supplies from their home pharmacy.

All of the participants denied a gap in medical care from their endocrinologists throughout the transition period to college, regardless of whether they had changed physicians. Said one, "I am in contact with my doctor's office and the registered dietitian [RD] frequently because I am trying to manage my weight, and they have been very helpful."

Many of the participants reported having recent contact with an RD or a certified diabetes educator (CDE) to follow up with insulin pump therapy, dietary concerns, or weight loss. All of the participants who reported working with these health care professionals (HCPs) described positive experiences and said they received helpful information. However, some participants said that their HCPs' lack of personal experience living with diabetes was a barrier for them. As one participant noted, "They [HCPs] don't understand what it is like living with diabetes, and it is hard to take their advice sometimes

because I feel like I know my body better than they do."

Resources

Resources available on campus at the time of the study were basic in nature and included services and programming from the student health and counseling services, the office of disability concerns, the recreation center, a dietitian at campus dining services, and the health promotion and wellness office. When asked what campus resources they used, many participants reported using the student health services clinic for both diabetes and nondiabetes care.

One participant reported having a negative experience because of the staff's lack of knowledge regarding diabetes management and the treatment of acute illness for students with diabetes. "I don't think they knew I had diabetes for the first part of my visit," the student said. "After I told them, they changed the course of action." This participant suggested that diabetes should be noted in students' medical files to ensure that appropriate care is given at the student health services clinic.

Many participants also reported a lack of knowledge of type 1 diabetes among other campus resources, and some said they had not yet had a need for campus resources to support their diabetes management.

Participants were asked for suggestions regarding campus resources to support diabetes management. Some participants suggested that an on-campus specialist or CDE would be a helpful resource. All of the participants discussed the benefit of having someone available to answer student questions and serve as a contact for students who are transitioning to campus life and self-managing type 1 diabetes.

Friendship and Support

The majority of participants reported having friends, both with and without diabetes, as their greatest resource on campus to support glucose management. Many participants reported subconsciously surrounding themselves with other people with diabetes because they have a common trait that links them. These participants reported the benefits of friendship with other students with diabetes as a support system of people who "know what you are going through." Support from friends to aid in diabetes management was a common theme throughout the interviews.

Discussion

The everyday challenges of maintaining glycemic control emerged as a common theme among new college students with type 1 diabetes. Participants in this study reported many barriers to successfully managing diabetes during the transition from living at home to living independently in a university residence hall. These barriers included increased carbohydrate availability through campus dining facilities, pressure from peers regarding alcohol, decreased availability of diabetes supplies and adequate storage space for them, and impact of diabetes on academic performance, including missing classes because of high or low blood glucose levels. Participants reported that the new and greater degree of independence associated with going to college often led to a subsequent decline in blood glucose control. Each participant expressed the need to overcome the challenges of diabetes management while succeeding academically and developing a psychosocial identity.

The first few months of living in the residence halls, before students felt comfortable with other aspects of college life, appeared to be the greatest challenge, with many students struggling with blood glucose control early on. Comments were made such as, "The staff here may not understand [how to treat symptoms] as well as family members do."

A key finding of this study was the need for guidance throughout the transition from living at home to living in a residence hall as a new college student. Participants frequently reported feelings of loneliness with regard to their diabetes because other people, "just don't understand what it is like to live with diabetes." The students who reported feeling less of an emotional strain from the transition had friends with diabetes around them or knew other people in their residence hall with diabetes to provide support. These relationships were serendipitous; however, the formation of an organization for students with diabetes could help to facilitate such supportive friendships.

Having an RD or CDE available on campus for students with diabetes could be another valuable resource for helping to alleviate some of the negative aspects of being a college student with diabetes. This would give students access to an HCP who is able to understand the difficulties involved in self-managing diabetes and to assist them in making positive behavioral changes to improve their diabetes self-management. Such a resource could help alleviate some of the barriers identified by participants in this study and result in a more positive experience for students with diabetes.

This study focused on new college students' successes and the challenges they face in managing diabetes when transitioning to residential life at college. A summary of these challenges can be found in Table 1. Similar to our findings, previous research found that challenges encountered by adolescents with diabetes included the desire for more independence, the desire to feel "normal," avoidance of diabetes management tasks to "fit in," and frustration with failure to maintain well-controlled blood glucose levels regardless of their efforts (4). Available literature documents the diabetes management challenges of adolescents with diabetes and their parents. However, studies focusing on the first-year college student population are limited.

TABLE 1. Diabetes Management Challenges First-Year College Students Face When Transitioning to College

- Maintenance of glycemic control despite an abundance of available high-carbohydrate food and peer pressure

- Lack of guidance on independent living

- Emotional strain and lack of the support system of home

- Impact of diabetes on academics

- Inadequate availability of and storage for diabetes supplies

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Limitations

Although our study fills a gap in the literature by focusing on the perceptions of first-year college students with type 1 diabetes of how transitioning from home to college affects diabetes management, there are some limitations. The study was limited to first-year students living in a residence hall at one Midwestern university. Future work could expand the focus to include first-year college students who live off campus. Although a sample of 13 participants reporting similar experiences is sufficient to demonstrate consistency in a qualitative study, these findings may not be generalizable to all college students with type 1 diabetes.

Conclusions

This study identified the need to develop or expand resources and support for students with type 1 diabetes on a college campus. Table 2 provides a summary of possible actions to address this need. Our results also increase awareness of the need to better prepare students with diabetes for independent living at college. Such

an effort could increase their potential to achieve tight glycemic control through insulin pump therapy or multiple daily insulin injections while balancing the academic and social demands of college. Additionally, HCPs can promote the development of students' psychosocial identity as they enter adulthood.

The results of this study may help HCPs gain insight into their role in supporting the transition of students with diabetes from home to college. Practitioners working with high school students may find success in encouraging these students to take more responsibility for their diabetes self-management before they enter the college environment. Our findings may also benefit diabetes care providers in developing programs to ease patients' transition from pediatric to adult clinics. Additionally, our results support expanding the diabetes education and resources available to students with type 1 diabetes living independently in a college residence hall.

Recommendations for future research include assessing what other

colleges are doing to support their students with diabetes or other chronic illnesses to identify effective resources for various student populations. Further investigation is also warranted of available and needed resources offered to students with type 1 diabetes through campus dining services.

Transitioning to college is a significant milestone for all young adults. Considering the potential impact of this transition on students with type 1 diabetes can help to identify ways to enhance their college experience while removing potential barriers that may negatively influence their diabetes management and long-term health.

Duality of Interest

No potential conflicts of interest relevant to this article were reported.

Author Contributions

A.F. researched the data, contributed to the discussion, and wrote the manuscript. J.R.S., J.B., R.M., and M.W. contributed to the discussion and reviewed and edited the manuscript. J.R.S. is the guarantor of this work and, as such, had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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TABLE 2. Actions to Meet the Resource and Support Needs of First-Time College Students With Type 1 Diabetes

- Develop on-campus programming such as support groups for students with type 1 diabetes.

- Increase awareness of the needs of students with type 1 diabetes among campus HCPs and other professionals who work with these students.

- Increase education for students with type 1 diabetes to prepare them for independent living.

- Provide diabetes-specific resources such as sharps disposal containers and a CDE on campus.

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