Living with Diabetes Simulation

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Background

- 37.3 million (11.3%) of the US adult population is living with diabetes and the prevalence is rising[1]
- 96 million (38%) people have prediabetes[1]
- People with diabetes and those at risk of developing diabetes should have access to and receive diabetes self-management education and support (DSMES)[2-3]
- There are 6 standards related to DSMES: (1) support for DSMES services; (2) population and service assessment; (3) DSMES team; (4) delivery and design of DSMES services; (5) person-centered DSMES; and (6) measuring and demonstrating outcomes of DSMES services. DSMES Standard 5 emphasizes the importance of being person-centered.[2]
- Simulations in a learning environment have been described as "a technique for practice and learning across many different disciplines that is meant to replace and amplify real experiences with guided ones with the goal of replicating or evoking the most substantial depictions of real world".[4]
- Simulation has the potential to help students appreciate the day-to-day routine that a person with chronic conditions undergoes
- It is hoped that by enhancing appreciation for chronic conditions such as diabetes, students will empathize more with people they interact with and ultimately, improve person-centered care

Pre-Living with Diabetes Survey

1. I am confident in my ability to communicate effectively with patients with diabetes

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

2. I am confident in my ability to carb count

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

3. I am confident in my ability counsel a patient on proper FSBS technique

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

4. I am confident in my ability to proactively pharmacologically manage blood glucose trends to prevent hyper- or hypoglycemia from occurring

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

5. I understand the demands of living with diabetes

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree

Post-Living with Diabetes Survey

Included the same 5 questions as the pre-survey with the added open question:

What is one thing you have learned about diabetes this month that has made an impact on your perceptions?

Simulation Process

Type 1 Diabetes Simulation (3 days)

- Students are texted blood sugars (pre-breakfast, lunch, dinner and bedtime) from preceptor and have 1 hour to respond that they 'checked' their blood sugar
- Students record all personal dietary intake and calculate their insulin dose based on regimen provided, their personal carbohydrate intake and received blood sugars
- Students, independently, check their own blood sugars with given glucometer 4 times daily for 3 days

Type 2 Diabetes Simulation (3 days)

- Students are texted blood sugars (pre-breakfast, lunch, dinner) from preceptor and have 1 hour to respond that they 'checked' their blood sugar
- Students record all personal dietary intake and calculate their percentage of macronutrient intake for each day
- Students, independently, check their own blood sugars with given glucometer 4 times daily for 3 days

Final

- Students provide clinical recommendation on medication adjustments needed based on preceptor provided blood sugars for both type 1 and type 2 diabetes
- Students write a 1-page self-reflection of the experience
- Students complete a pre-survey prior to experience beginning and then a post-survey after the experience

Simulation Objective

The purpose of this simulation is to provide 4th year pharmacy students on an ambulatory care experiential with an opportunity to gain knowledge, understanding, disease state confidence and perceptions of daily living before and after simulating life with type 1 and type 2 diabetes

Disclosure Statement

- Author has nothing to disclose.

Summary of Experiences

- 79 students have gone through the simulation activity between 2012 and 2022
- Selected comments from the post-survey:
  1) "I also realized how important it is for health care providers to really encourage and help their patients do these things in order to find the right regimen for their patients""
  2) "What's impacted my perception the most is having a greater understanding of the mental burden that can come with diabetes. It is very difficult to change behavior, and particularly with patients who develop diabetes as adults, it is an adjustment that takes a lot of motivation and effort"
  3) "I have more sympathy/empathy for people with diabetes"
- With each of the 5 survey questions, the majority of students improved in their confidence levels (range 56-80%) with most student improving their confidence in question #5 (understanding the demands of living with diabetes)

References

1) Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2022. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Department of Health and Human Services; 2022; 2) Davis J, Fischl AH, Beck J,et al. 2022 National standards for diabetes self-management education and support. The Science of Diabetes Self-Management and Care. 2022;1-17; 3) American Diabetes Association. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Medical Care in Diabetes – 2023. Diabetes Care. 2023;46(S1); 4) Lateef F. Simulation-based learning: just like the real thing. J Emerg Trauma Shock. 2010;3(4):348-352.