A Pathophysiology Walk-Through Active Learning Strategy

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Introduction

Active learning refers to “any activity encouraging students to participate in learning approaches engaging them with course material and enhancing critical thinking as they make applications beyond the classroom” (Adkins, 2018, pp. 34–35). These principles were promoted by creating an activity that allowed students to walk through the processes of absorption, distribution, metabolism, and excretion (ADME). Before the activity started, a short lecture about pharmacokinetics was provided to allow successful completion of the activity because active learning guides learners through the learning process as they build new knowledge and skills upon lessons already learned (Berek, 2017). This strategy was designed to allow 50 sophomore-level baccalaureate nursing students to learn the difficult and in-depth concept of pharmacokinetics and what happens to a medication from entrance to exit of the body, in a fun, simple, and structured format.

Method

Several poster-size signs of various destination points were hung around the classroom referencing medication's path through the body. Each destination had enough space to require a student to travel five or more steps for clarity and understanding. Signs included a mouth (for oral administration), a hand with an intravenous pole (for the parental route), a stomach and intestines, blood drops, a liver, the kidneys with emphasis on the glomerulus, and a toilet.

Additionally, colorful card stock was laminated with certain words: “Medication A,” “Medication B,” “Active Metabolite,” “Inactive Metabolite,” “Free Drug,” “Bound Drug,” “Albumin,” “Blood-Brain Barrier,” “Placental Barrier,” “Filtered Drug,” “Active Tubular Excretion,” and “Active Tubular Reabsorption.” Each card option had its' own color; for example, yellow purposely represented the urinary components. Various students were voluntarily requested to come to the front of the room. Three students were provided a medication A card (enteral route) and three students were provided a medication B card (parental route). The rest of the class participated by telling or leading the medication students to their next destination. The medication students traveled through the ADME process. For example, after being “swallowed,” the Medication A students would travel to the stomach/intestines sign, then to the liver sign to undergo the first pass effect, and so on until they reached the toilet.

Results

The students were provided a Qualtrics® survey that allowed them to anonymously voice their thoughts about the active learning activity. An overwhelming amount of positive responses were received, including: “This was great,” “so helpful,” “Can we do it again? Please!” “So much fun,” and “I really learned a lot from this.” While reviewing for their first examination, the students described how they
were able to successfully answer the pathophysiology-related questions by recalling their experiences from this active learning activity.

**Conclusion**

This short but incredibly engaging active teaching strategy allowed a pathophysiology–pharmacology instructor to present a lengthy, detailed, and complex concept into a simple format to promote understanding for further topics in the course. It allowed the students to work together, ask questions, and participate in the travel of a medication through the ADME process in more relatable terms.

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References
