

### Evaluating Student Learning in an Undergraduate Pharmacology Nursing Course Using Pharmacology Timed Tables

Nurses' roles related to administering, prescribing, and educating patients about their medications are expanding. Nurses need to have adequate knowledge in pharmacology to provide safe, high-quality care to their patients. Some studies suggest there is a lack of student knowledge in pharmacology, and some practicing nurses do not have a sufficient understanding of pharmacology (Dilles, Vander Stichele, Van Bortel, & Elseviers, 2011; King, 2004).

One strategy for increasing student recognition of medication names and their classifications is through the use of pharmacology timed tables. Pharmacology timed tables require the student to match preselected medications with their appropriate therapeutic classifications. These timed tables were used to evaluate student knowledge regarding medications in an undergraduate pharmacology nursing course.

#### Construction of the Pharmacology Timed Tables

Nursing students enrolled in an undergraduate pharmacology course were first given information regarding medications and their appropriate classifications in lecture. The students were also given a list of medications and classifications to study independently at least 2 weeks prior to testing. For example, one study list for antibiotics included penicil-

lins, fluoroquinolones, and macrolides. Some specific individual medications listed were amoxicillin, ampicillin, ciprofloxacin, levofloxacin, erythromycin, and azithromycin. The names of the individual medications were then entered into a remote-clicker computer program that allowed each name to be displayed separately on a projector screen and to be changed quickly to the next medication.

When the actual testing time occurred, the students were divided into three to four groups, depending on the number of students in the class. Each group had a different list of medications to match to their appropriate classifications. Using the remote-clicker program, an LCD projector, and a timer, an individual medication would appear on the projector screen for 10 seconds (the timer was used to count down the 10-second intervals) for a total of 10 medications. Each student in each group had to identify (or write down) the correct classification of each individual medication. A list of all 10 medications appeared on the screen after all the medications had been displayed individually, and the students were then allowed an additional 30 seconds to review their decisions and make any changes. The timed tables were administered prior to each written unit test and were counted for a total of 10% of their course grade.

#### Summary and Recommendations

Pharmacology timed tables offer a unique method for evaluating student learning in relation to medications. Stu-

dents enrolled in the undergraduate pharmacology nursing course have scored 90% or higher on the timed tables for the past 2 years. They are able to quickly recognize and associate individual medications with their appropriate classifications.

The knowledge related to sight recognition of medications and their classifications can be beneficial in the clinical setting when managing patients. In addition, when used with personal response systems, such as remote clickers, the pharmacology timed tables can provide immediate feedback for students and faculty. One disadvantage noted has been student anxiety about having to make a selection within a short time frame (10 seconds).

Further study needs to be conducted related to the effectiveness of the pharmacology time tables in enhancing and increasing students' knowledge of medications within the clinical setting.

#### References

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