Purpose of the Research

- To evaluate the utility of web-based pharmacology modules on students’ acquisition of knowledge and satisfaction
- To strengthen the pharmacology content in an integrated curriculum in baccalaureate nursing education
- To strengthen the ability of new graduates of the nursing programs at UW-Eau Claire to provide competent, safe nursing care

Research Question

What is the effect of implementing web-based pharmacology modules on knowledge and satisfaction of undergraduate students in a baccalaureate nursing program?

Significance

- Trends in medical care are marked by increased use and complexity of pharmacological therapies, increased acuity of hospital patients, and aging of the population
- Nurses in hospital settings are the surveillance system to protect patients from complications of medications; nurses not only administer medications, but they assess both therapeutic and adverse effects
- Nurses teach patients how to manage their medications and monitor the medication effects at home
- Knowledge of clinical pharmacology is an important educational outcome for nursing education
- Media attention to medical errors, specifically medication errors in nursing practice (Beren, 2000), has focused increased attention on pharmacology in nursing education

Sample

- Medium sized public comprehensive university
- Two cohorts of graduating seniors in the nursing program
- December 2006 graduates (n=40)
- May 2007 graduates (n=64)
- Eau Claire site (n=42)
- Marshfield site (n=23)

Design

Evaluation research data were collected at the end of each semester. The pharmacology modules were integrated in three senior courses. NLN Achievement Test was administered to both cohorts of students in the 10th week of their final semester.

Data Collection

- Pharmacology knowledge
- NLN Achievement Test scores
- Student Satisfaction
  - Likert scale evaluation
  - Open-ended comments

Data Analysis

- T tests to compare scores on the NLN Pharmacology Achievement Test before and after implementing the pharmacology modules
- Descriptive summary of quantitative data on student satisfaction
- Qualitative summary of strengths and weaknesses of using web-based pharmacology modules and students’ perceptions on the adequacy of the pharmacology curriculum

Findings

Student Evaluations of Pharmacology Modules

<table>
<thead>
<tr>
<th>Pharmacology Scales</th>
<th>Group</th>
<th>N</th>
<th>Mean % and Standard Deviation</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drug Calculations</td>
<td>Control Group Online Modules</td>
<td>40</td>
<td>75% (45) 88% (15)</td>
<td>2.209</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Medication Principles</td>
<td>Control Group Online Modules</td>
<td>40</td>
<td>66% (8) 73% (10)</td>
<td>-5.217</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Medication Effects</td>
<td>Control Group Online Modules</td>
<td>40</td>
<td>71% (11) 78% (9)</td>
<td>-3.787</td>
<td>p &lt; 0.001</td>
</tr>
<tr>
<td>Total</td>
<td>Control Group Online Modules</td>
<td>40</td>
<td>71% (9) 73% (9)</td>
<td>-0.453</td>
<td>p = 0.63</td>
</tr>
</tbody>
</table>

Open-ended comments on evaluation form

- 30% of the students recommended adding a pharmacology course to the nursing curriculum
- 20% of the students recommended more pharmacology brought into class lectures in the nursing curriculum

Conclusions

- The technological strategy of using online pharmacology modules as an independent course assignment was not effective.
- Outcomes support previous curriculum evaluation findings that students would prefer a separate pharmacology course in addition to current integration of pharmacology into all relevant courses.
- This study provides evidence for decision-making by the Undergraduate Nursing Curriculum Committee.

This research was partially funded by a Faculty/Student Collaboration Grant from the University of Wisconsin-Eau Claire