2015

Evaluate to Learn: Integrating Assessment Data to Improve Outcome of a Didactic Biomedical Science Course

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feedback. Students were given patient level pre- and post-education training tests. The average score on the pre-test was a 67.5% while the average post-test score was 91.8%. Analysis of pretest data identified the strongest knowledge area in diabetic pathophysiology (75%) while diabetes diagnostic testing methodologies were weakest (40%). Scoring ranged from a low of 86% to a high of 97% across all question categories on the post-education training test. **Implications:** This course provides students with a basic ability to counsel patients on diabetes and lifestyle changes during their early experiential education rotations, rather than waiting for the topic to be formally taught in the third year pharmacotherapeutics course. Students gain an understanding of practical patient diabetes education and self- management techniques, making this an indispensable tool and professional reference for student pharmacists.

Evaluate to Learn: Integrating Assessment Data to Improve Outcome of a Didactic Biomedical Science Course. Paramita Basu, *Touro College of Pharmacy-New York*, John Fisher, *Touro College of Pharmacy-New York*, Batoul Senhaji-Tomza, *Touro College of Pharmacy-New York*, Suzanne Soliman, *Touro College of Pharmacy-New York*. **Objectives:** To describe the evaluation system used to identify curricular issues within a pre-clinical biomedical science course in a Pharm.D program and report the difference in outcome after implementation of the resulting changes. **Method:** Course content, sequence of delivery and integration of topics with other courses in the relevant tracks were reviewed to identify discrepancies. Evaluation feedback from students and faculty were obtained from E-value online course evaluation system, and end of course discussion reports. Student performance in the course before and after implementing the recommended changes were compared to assess their effectiveness. **Results:** Content duplications and discord in the delivery sequence were identified within the course and corrected accordingly. Infectious disease content was also added in the form of interactive group cases. The information obtained from evaluations by students and faculty were compiled as a list of recommendations communicated to the course coordinator, as guidelines to alter the structure and content of the course. The overall class average earned by students enrolled in the course increased by 12% and the mean score obtained for course effectiveness in the E-value course evaluation tool improved by 0.5 points (in a scale of 1 to 5) after changes. **Implications:** The data indicates a probable improvement in student learning as a result of the assessment driven course changes. But the student performance comparison data are restricted to 2 cohorts which limits the reliability of the results thus requiring further investigation.

Evaluating Student Perceptions of Group-Based Learning in the First Year of Pharmacy School. Lila P. LaGrange, *University of the Incarnate Word*, Marcos Oliveira, *University of the Incarnate Word*, Adeola O. Coker, *University of the Incarnate Word*. **Objectives:** The objectives were to develop student groups by implementing a process that considered student performance and personality, evaluate student perception of group effectiveness, and identify activities that students perceived to work best for their learning. **Method:** A process for creating student groups was developed by balancing different personalities (True Colors Test) with student ability based on pre-pharmacy GPA. This was implemented across three different courses (Biochemistry, Anatomy & Physiology, and Pharmaceutics) in the beginning of fall 2014. Self- and peer-assessments were completed midway and at semester end. A survey was conducted to assess student perceptions after the fall semester. IRB approval was obtained. **Results:** Eighty of 93 students completed the study. The majority of students indicated they were already familiar with group activity (55%). Most (90%) students felt that assigned group activities worked well and a majority felt that self- and peer-assessment improved their learning (84%) and group effectiveness (90%). A variety of group-based activities were implemented across the three courses, including daily quizzes, case studies, clicker questions, concept mapping, and group exams. Approximately 90% or more of students felt these activities were effective for their learning, with group exams having the highest perceived benefit (99%). However, the majority preferred traditional lecture (68%) over group-based learning. Class preference for group (52%) versus individual (48%) activity was divided. **Implications:** The group design process and activities were effective for student learning although the majority of students preferred traditional lecture. This supports the importance of incorporating diverse learning activities in the classroom.

Exploring the Role of Protein Disulfide Isomerase Inhibition in the Health Benefits of Super Foods. Christine N. Galinski, *Western New England University*, Megan A. Ooms, *Western New England University*, Kayleigh D. Mitchell, *Western New England University*, Daniel R. Kennedy, *Western New England University*. **Objectives:** To determine whether inhibition of protein disulfide isomerase (PDI), an enzyme implicated in the progression of many diseases, including heart attacks, strokes, HIV, cancer and diabetes, contributes to the health benefits of consuming fruits and other plant-based foods. **Method:** A total of 40 foods were purchased as freeze-dried powders and resuspended in a 50/50 mixture of water and DMSO at 10 mg/mL. Activity was examined by determining their inhibition of PDI activity in an insulin turbidimetric assay. Positive inhibitors were confirmed in a fluorescence based peptide assay and subsequently examined for their ability to inhibit PDI related thiol isomerases. **Results:** Of the 40 super foods tested, 25/40 demonstrated at least moderate PDI inhibitory activity at concentrations of 1mg/mL. The strongest inhibitors include green tea, grape, pomegranate and acai berry ($\leq$100 ug/mL). However, other popular supplements including blueberry, yumberry, ginger, and papaya failed to inhibit the enzyme at levels over 1 mg/mL. Interestingly, most positive inhibitors were not selective for PDI, displaying inhibition toward PDI related thiol isomerases ERp5 and ERp57. **Implications:** Many popular super foods inhibit PDI, providing mechanistic support to a variety of the known health benefits of these foods. Consumption of PDI inhibiting compounds may contribute to the prevention of aberrant thrombus and fibrin formation as previous studies have found 2-3 glasses of grape juice contains enough bioactive compounds to inhibit thrombus formation. Consumption of such foods may also delay the progression of neurodegenerative disorders and some cancers, as well as decrease the risk of developing diabetes.

Identification of Up-regulated Genes in Invasive Breast Tumors with FGD1 Expression. Christopher L. Farrell, *Presbyterian College*, Nancy G. Pedigo, *Presbyterian College*, Lynne J. O'Donoghue, Scott T. Bagwell. **Objectives:** To evaluate how the activity of FGD1 leads to the upregulation of cancer genes that can cause an invasive phenotype in breast tumor cells. **Method:** FGD1 gene was analyzed for sequence and copy number in primary breast tumors of human cancer patients. These tests were used to correlate rare genetic variants with patients who had invasive breast tumors. To evaluate the importance of FGD1 in breast cancer cells, a RNA microarray was used to determine the change in FGD1 expression. Following the knockdown with the shRNAs in a breast cancer cell line that constitutively expresses FGD1, MDA-MB-231, the FGD1 knockdown and control cells were compared for differences in expression. **Results:** There were two silent polymorphisms identified in approximately 40% of the tumors