Literature Review

- Team Based Learning (TBL) is a collaborative learning and teaching approach that emphasizes student preparation outside the classroom so that application of content occurs in class.
- Statistically significant higher standardized test scores in specialty obstetrics and psychiatric mental health courses when taught using TBL versus traditional lecture.
- Systematic reviews concluded students in TBL classes score higher on exams and is an effective pedagogical approach.
- Literature supports the use of TBL in higher education; however, there is limited evidence on student learning outcomes within nursing programs.

Research Question

- Is there a difference between Accelerated Bachelor of Science in Nursing (ABSN) students’ pharmacology national test and final exam scores when taught using a traditional lecture-based versus a TBL approach?

Measures

- Control group: Students in cohorts 1 and 2 were taught using a traditional lecture-based approach (PowerPoint as the main delivery of content) in the 4-credit nursing pharmacology course for students in cohorts 1 and 2.
- Intervention group: Students in cohorts 3, 4 and 5 were taught using TBL. Additionally, the pharmacology course was reduced to 3-credits and the course was split into a 2-credit course as “pharmacology 1” taught using a traditional approach and a 1-credit course as “pharmacology 2”.
- 10-item multiple choice individualized readiness test (IRAT) and group readiness test (GRAT) were introduced in the TBL cohorts using case studies.
- All cohorts took a similar 60-item multiple choice final exam.
- All cohorts took a similar 75-item integrated standardized criterion-referenced national pharmacological/parenteral therapy test.

Results

- A significant difference was found between the pharmacology final exam scores for the TBL group (mean [SD], 62.17 [9.40]) and traditional group (mean [SD], 59.79 [8.39]); t (336) = -2.25, P < .05. Chi-square was significant, χ² (1, N = 338) = 21.74, P < .001, for sufficient level of attainment* (yes/no) and approach. Students taught using TBL were more likely to achieve proficiency level (45.2.0%) than students taught using traditional methods (19.1%).

Data Analysis

- Data were analyzed using descriptive statistics and bivariate analyses (independent t-tests) were used to compare the means of final exam and standardized test scores between students taught using traditional or TBL approaches.
- A chi-square test of independence was performed to examine the relationship between sufficient level of attainment on the pharmacology standardized test and the approach.
- The Pearson product-moment correlation coefficient was computed to assess the relationship between the standardized test and 4 IRAT scores.

Discussion & Conclusion

- TBL had a positive and significant impact on learning outcomes.
- The rigorous design, including the use of a standardized criterion-referenced exam and high correlation with the instructor-developed final exam, increases the confidence of study findings.
- TBL may be a more efficient approach to teaching, as students in the TBL group had only 3-credit hours for content versus students in the traditional lecture group had 4-credit hours for content.
- Through content engagement and collaboration in teams, this approach facilitated application of didactic knowledge to case studies.
- Limitations of this study include a convenience sample drawn from a single university and lack of inter-rater reliability on final exam questions, resulting in restricted generalizability.