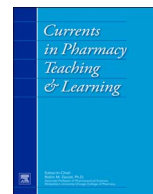




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Short Communication

Debate as an alternative method for medical literature evaluation

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ABSTRACT

Background and purpose: To determine the student impression of utilizing a debate style journal club as an alternative approach for preceptors to teach medical literature evaluation skills to pharmacy students undergoing Advance Pharmacy Practice Experiences (APPE) in both acute care and ambulatory care.

Educational activity and setting: Students were asked to debate on a controversial topic or two drugs with similar indications. Each side had to research supporting evidence based medicine and use literature appraisal skills to incorporate the information logically into an oral debate style format. Approximately fifteen minutes were allotted for each debate, allowing five minutes for each opening argument, three minutes for each rebuttal, and two minutes for each closing argument. Students were then asked to complete a post-debate survey using a Likert Scale to evaluate their perception of the debate style journal club.

Findings: Following implementation of the debate style journal club, students reported being more confident with their ability to find, compare, and retain information from primary literature with a mean of 4.1, 4.2, and 4.4 respectively on a Likert Scale. Students also reported overall enjoyment and satisfaction with a mean of 4.0.

Summary: Debate style journal clubs have the capability to teach pharmacy students vital literature appraisal skills, and are a well-liked alternative to the traditional style journal club. Incorporating this method improved student interest as well as increased their ability to find, compare, and retain the information gathered from primary literature.

Background and purpose

Exceptional critical appraisal skills are vital for all healthcare practitioners to remain abreast with the most relevant literature and clinical practice. With these skills, each practitioner is expected to be adept at thoroughly evaluating research to implement the acquired knowledge in the form of evidence-based practices. Prior to entering into clinical practice, graduating pharmacy students are required by the Center for the Advancement of Pharmaceutical Education (CAPE) Educational Outcomes to be able to critically analyze and integrate evidence from literature into clinical decision making.¹ In accordance with the CAPE outcomes, it is common practice for pharmacy students on clinical rotations to present an article in the format of a journal club. This is a traditional method that preceptors often use to teach students the fundamental literature appraisal skills necessary for applying the literature to clinical practice, while also enabling students to remain up-to-date with current evidence.² The format of journal clubs may vary depending on the rotation site. Typically, a traditional journal club presentation requires the presenter to introduce relevant background information from the current medical literature, describe the study methodology and results of the journal article, provide positive

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and negative critique, and ultimately offer an opinion on the article's clinical significance.

Despite being common practice for pharmacy students on clinical rotations, the traditional journal club format has flaws. Specifically, the traditional journal club utilizes only single article selection for critique and is occasionally viewed as transmitting only superficial knowledge of new developments in a particular topic or area.³ Another challenge is finding ways to instill enthusiasm as well as an appreciation for the clinical importance of a journal club, especially given that students generally do not have the opportunity to apply the gained knowledge and information to real-life patient scenarios.² As described by Packard et al.,² traditional journal club format is centered around one selected article versus answering a clinical question. Utilization of an “evidence-based journal club” offers students an ability to apply a selected article to clinical practice. Alternative methods have been documented to be a reasonable substitute to the traditional journal club structure especially when the outcome of interest is to teach students to not only understand literature appraisal skills but also apply literature to clinical practice.^{2,4,5}

While the evidence-based journal club has documented utility similar to the traditional format, its structure can be seen as mundane when used as a required project for pharmacy students on experiential rotations. Another alternative to teach essential critical appraisal skills is to debate. Debate has been used as an educational method in a multitude of pharmacy and non-pharmacy related subjects, and it is an effective way to introduce complex and controversial issues into teaching.^{6–8} It can be utilized as a strategy to improve verbal communication, critical-thinking skills, as well as literature search strategy and appraisal.^{6,9–17} Additionally, it has documented success in development of teamwork, peer assessment, communication, and critical evaluation.^{18,19} Therefore, the debate format is a favorable alternative that may be used to make journal clubs more interesting through enhanced participation, communication and creativity while continuing to enrich medical literature appraisal skills.^{20,21} Despite all of the positives that the debate style journal club presents, little information exists regarding its overall utility and student perceptions when compared to other traditional formats.² The purpose of this study was to evaluate student perceptions of the debate style journal club so this method may be utilized in the future by pharmacy preceptors to teach students how to critically analyze literature. Student perception regarding use of this journal club style may ultimately promote a more interactive way of learning.

Educational activity and setting

A debate style format was utilized as an alternative method to traditional journal club presentation. Although there has been some literature describing methods to improve journal-based learning; including templates, formats, questionnaires, and pre/post-test, the use of a debate style format applied to the journal club appears to be a novel approach. This method incorporated multiple areas of Bloom's Taxonomy (evaluation, synthesis and analysis), and by having students present in a debate format, emphasis was placed not only on communication skills and but critical thinking as well. As such, the student no longer had the structure of a planned presentation and would need to think quickly and critically to improvise the argument dependent upon the opposing debater's argument. Students in their fourth year of pharmacy school on their experiential ambulatory care and acute care rotations were given a controversial topic or two drugs with similar therapeutic indications and asked to debate their side of the argument in a classroom environment at the Lake Erie College of Osteopathic Medicine School of Pharmacy. Examples of assigned topics included changes in the blood cholesterol and hypertension guidelines, use of dipeptidyl peptidase-4 (DPP4) inhibitors versus sodium-glucose cotransporter 2 (SGLT2) inhibitors in the management of type 2 diabetes, current versus historical evidence for double coverage of *Pseudomonas* sp., and ticagrelor versus clopidogrel for treatment of acute coronary syndromes. Each of the discussions focused on the inclusion of evidence-based medicine in addition to literature appraisal. Prior to each debate, students were given a written explanation of the debate format along with a description of content for each debate segment (introduction, body, conclusions, rebuttal speech and closing argument). Approximately 15 min were allotted for each debate, which allowed five minutes for each opening argument, three minutes for each rebuttal, and two minutes for each closing argument. Students were graded on preparation for the debate and knowledge of the subject matter. However, the audience of faculty and peers determined a champion of each debate. Post-debate, students were given constructive feedback from the faculty. The debate approach was evaluated by student perceptions post-debate using a survey created by the authors. Students were asked to rank statements with a Likert Scale (1-strongly disagree through 5-strongly agree) regarding ability to analyze drug information, performance with communication skills, and confidence to discuss primary literature and debate therapeutic options. A total of eight questions were examined, two of which focused on the student attitude toward the debate in comparison to the traditional journal club format (Appendix A). The comparison questions required students to have previously completed a traditional journal club format during experiential rotations. The results were collected anonymously and analyzed using descriptive statistics in Microsoft Excel®. Incorporation and evaluation of this teaching method was evaluated and deemed exempt by the institutional review board (IRB) from any further approval or review.

Findings

A total of 17 students completed questions 1–6, and a total of 12 students completed the comparison portion of the questionnaire. After completion of the debate, survey results listed showed students had increased confidence with their ability to find, compare, and retain information from primary literature (mean of 4.1, 4.2, and 4.4 respectively). Furthermore, students reported overall enjoyment and satisfaction with the debate format (mean 4.0). Some uncertainty regarding improvements in communication and overall drug information skills was observed (mean of 3.9 for both). The 12 students that completed questions 7 and 8, which assessed perceptions of debate to the traditional journal club format, reported uncertainty with a trend toward an

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