

The impact of a journal scan assignment on advanced pharmacy practice experience students' confidence in evaluating pharmacy/medical journals in the United States

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Abstract

Aims: To evaluate how a journal scan assignment improves students' overall confidence and comfort in discussing journals.

Method: Pharmacy students in the fourth professional year (PY4) selected a journal and evaluated scope of coverage, nature of articles and advertisements.

Results: Students completed an anonymous pre (n=42) and post (n=41) assignment survey. Sixty-four per cent subscribed to journals, 5% reported reading the entire issue "often". Students could describe at least one topic section (33% pre, 98% post; $p=0.001$), what is found in the original contribution/research section (33% pre, 88% post; $p=0.001$), review section (38% pre, 90% post; $p=0.001$), editorial section (26% pre, 71% post; $p=0.001$) and patient pages (10% pre, 66% post; $p=0.001$), could identify quality of the journal based on advertisements (12% pre, 83% post; $p=0.001$) and could discuss journals with colleagues (14% pre, 68% post; $p=0.001$).

Conclusion: The journal scan assignment was well received and increased students' knowledge of journal elements, topic sections and confidence discussing journals with colleagues.

Keywords: *Experiential Education, Journal Scan, Literature Evaluation*

Introduction

With the evolution of current healthcare systems, a focus on Evidence-Based practice and teaching students how to critically analyse literature has increased in importance. The availability of biomedical literature has been facilitated by the use of the Internet and electronic media. Healthcare professionals need skills for managing and utilising electronic resources effectively for their education, patient care practice and research. A greater number of libraries are introducing electronic resources while eliminating their print journal collections (The Boston Globe, 2014). Some of the advantages of digital resources, as compared to print format, include remote and 24-hour access, reliable availability (source not checked out of library), multiple users for a single source, search capability and links to additional information, as well as better utilisation of space (Liu, 2006). Whether there might be a generational gap with students preferring electronic journals as compared to their faculty is subject to debate (Tenopir *et al.*, 2004). Sathe reports that print journals are used more for browsing/scanning the table of contents, while electronic journals are used for printing specific articles and checking the references (Sathe *et al.*, 2002).

Journal club assignments are a method in healthcare education to practice interpreting and communicating information to healthcare professionals, skills important for all pharmacists who provide drug information on a routine basis (Arif *et al.*, 2012). Since these assignments strengthen the students' confidence, pharmacy programs have begun incorporating journal club exercises in their drug information courses. Cole and colleagues found that 89% of traditional schools of pharmacy in their sample required students to take at least one drug information course, while 36% required two courses in literature evaluation. Almost 70% of all traditional drug information courses included an assignment to critically evaluate literature (Cole & Berensen, 2005). Ninety percent of pharmacy students taking an experiential rotation in drug information were exposed to journal clubs at their practice site (Cole & Berensen, 2005). After participating in journal club assignments, pharmacy students appreciated their importance and felt they improved their literature review techniques (Arif *et al.*, 2012).

While it is very easy to obtain the specific article of interest in an electronic journal, students lose the

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opportunity to explore the entire journal itself. Consequently, they do not typically reflect on the nature and scope of a particular journal but only the article they retrieve. Therefore, they fail to explore such concepts as the target audience of the journal, types of articles published, number of advertisements, and the journal's editorial policy. There is also the lost opportunity to serendipitously or accidentally discover other interesting information that may be published in that issue of the journal. Evaluating one specific article without understanding the overall purpose and structure of the journal in which it is published is analogous to buying a home without taking into account the characteristics of the surrounding community. In the United States, both the current and proposed new Accreditation Council on Pharmacy Education (ACPE) Standards, as well as Center for the Advancement of Pharmacy Education (CAPE) outcomes, reference the importance of critical literature evaluation, as well as better overall learning self-awareness. (American Association of Colleges of Pharmacy, 2013; Accreditation Council for Pharmacy Education, 2016). Based on a review of the literature, we were unable to find any published information on journal scan assignments in the pharmacy curriculum.

Aim

To address the above concern and improve students' overall confidence and comfort in discussing pharmacy/medical journals, we began incorporating a journal scan assignment into a campus-based drug information centre Advanced Pharmacy Practice Experience during the last and experiential year of the pharmacy curriculum.

Method

In the journal scan assignment students were requested to select a medical/pharmacy or natural product journal of their choice and access the latest issue of the journal (print if available at the university library or electronic version). Students then presented to faculty and peers the printed table of contents and their evaluation of the journal issue for elements of peer-review, scope of coverage, nature of articles (original contributions, review section, editorial section, patient pages) as well as the number, type and placement of advertisements. In addition, students discussed two articles of interest in greater detail. Following each journal scan presentation, faculty posed questions to facilitate the discussion about the unique features of the presented journals and general concepts of journal quality evaluation. In addition, questions and misconceptions were addressed and clarified. The survey was created and edited by the faculty at the drug information centre over a number of meetings. Over a period of two years, all students on Advanced Pharmacy Practice Experiences at the campus-based drug information centre were invited to complete an anonymous, voluntary Institutional Review Board approved survey before (pre) and after (post) each journal scan assignment to determine their readership of pharmacy/medical journals and comfort/knowledge of specific journal elements and topic sections.

Statistical analyses were performed by a faculty statistician. Pre and post student responses to each item on the survey questionnaire were summarised using percentages. In addition, McNemar's tests were used to examine whether significant differences existed between these student responses to selected survey items. Results of these tests were considered statistically significant if the observed level of significance was $p < 0.05$.

Results

Fifty-three students were invited to participate with 42 completing the pre-survey and 41 the post-survey. Sixty-four percent personally subscribed to journals, with the most common being American Journal of Health-System Pharmacy and Pharmacy Times. Five percent of students reported reading the entire issue "often". Table I reports student responses to the survey before and after the journal scan assignment.

Table I: Student Knowledge of Journals Pre and Post Assignment

Survey Questions	Pre (%)	Post (%)	McNemar Statistic
I know how to find if the journal was peer-reviewed	29	95	25.04*
I am able to describe at least one journal topic section	33	98	23.04*
I understand what the original contribution/original research section of a journal is	33	88	20.05*
I understand what the review section of a journal is	38	90	19.05*
I understand what the editorial section of a journal is	26	71	16.06*
I understand what the patient pages of a journal are	10	66	21.04*
I am able to evaluate the quality of the journal based on type and placement of advertisements	12	83	26.04*
I am confident/comfortable discussing journals with colleagues	14	68	20.05*

*statistically significant, $p < 0.05$

Discussion

Journal scan assignments appear to be relatively uncommon in pharmacy rotations. Drug literature evaluation education and this journal scan exercise in particular incorporate all four domains from 2013 CAPE outcomes (American Association of Colleges of Pharmacy, 2013). The exercise helps students to understand specific elements in medical/pharmacy journals. It encourages them to create awareness for learning and information processing, and to develop the comfort level necessary to communicate with colleagues about medical/pharmacy literature. Education is all about finding opportunities for self-inquiry and exploration, and faculty should be encouraged to create assignments that allow students to do so.

Based on informal feedback, students enjoyed the assignment and generally felt it was less demanding than

the two typical journal club assignments they completed during this rotation. Although this project did not attempt to measure knowledge improvement, which is a limitation, based on survey results and feedback, students perceived they gained a deeper understanding of literature and journal evaluation concepts. Even though the concepts of journal evaluation are discussed in a typical drug literature evaluation course during their didactic training, students may not apply this information in practice and generally have not evaluated a large variety of journals.

To effectively incorporate a journal scan assignment, clear instruction criteria must be developed, even though autonomy in some elements of assignment (e.g., selecting journals) is welcome by students. Some journals may not have classic elements (e.g., editorials, meta-analyses, patient pages), but should be discussed for completeness. Journal scan assignments should not take the place of journal club exercises; however, they may work well when introduced early in the rotation to prepare students for effective evaluation of the literature. Since students appear to have higher satisfaction with elements of journal club assignments when a rubric or analysis of their performance was included (Blommel & Abate, 2007), faculty may also want to consider developing rubrics for objective student assessment during a journal scan.

Conclusion

Our overall experience incorporating a journal scan assignment into an Advanced Pharmacy Practice Experience was a positive one. The assignment was well received and students reported a significant increase in perception of knowledge in journal elements and topic sections as well as overall confidence discussing journals with colleagues. Students developed a greater appreciation for understanding and evaluating the journal itself which is a skill that has been diminished with the advent of electronic journals.

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