

Implementing an Evidence Based Journal Club in a Complementary and Alternative Medicine (CAM) University

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Introduction

One aim of a comprehensive evidence-based practice (EBP) curriculum development program at a complementary and alternative medicine (CAM) university is to increase the depth and breadth of exposure to and use of research literature in clinical education and practice. To address this goal, an evidence-based journal club was implemented during the internship of a doctor of chiropractic (DC) degree program. Journal clubs are an effective and efficient means to teach critical appraisal of the literature^{1, 4, 7, 12, 15}, remain current with the literature^{13, 21}, maintain competence in EBP^{2, 3, 6, 9}, and increase sincere interest in and use of the primary research literature^{10, 23}. Characteristics of successful journal clubs in professional health care curricula have been described¹⁴ and evaluated^{15, 18}, highlighting the need for applicability, utility, relevance and interest among others as the hallmarks of a “successful” journal club. This report describes the organization and launch of one of the first evidence-based, CAM oriented journal club programs integrated into a professional CAM curriculum, designed to teach essential EBP skills and behavior. The new journal club included the characteristics of “successful” journal clubs in other professional health care programs while maintaining applicability to CAM healthcare practice.

Essential EBP skills have been identified as: asking a searchable clinical question, searching the literature, identifying, accessing and critically appraising high quality research papers,

applying the literature to clinical situations and assessing clinical impact^{8, 11, 16, 20}. Successful evidence-based journal clubs^{14, 15} start with a patient-oriented, clinically relevant, searchable question²². Essential to a quality journal club are well-rounded critical appraisal skills including basic knowledge of study design, research methods, epidemiologic concepts, biostatistics, relevance, validity and clinical applicability¹⁵. Other components facilitating journal club success include a clinical appraisal worksheet¹⁴, distribution of the paper via multiple means^{14, 15}, and archives of questions and critical appraisals. Discussions including application to current practice, clinical impact and determining the “clinical bottom line” close the evidence-based journal club presentation¹⁴.

In addition to teaching EBP skills and providing current, relevant, synthesized CAM evidence, the evidence-based, CAM oriented journal club was designed to address the needs and concerns of students regarding EBP and CAM as well as to facilitate integration of evidence-based behaviors into professional, clinical practice.

Methods

Journal clubs were structured as required clinical hours, scheduled at the end or beginning of each shift (typically during lunch hour), and were held at the clinic where the interns treated patients. Simple lunches were provided since published research shows food encourages attendance, adds convenience and provides a relaxed atmosphere¹⁹.

All students in their clinical internship of a DC program were required to participate in the EBP journal club for two trimesters, during the ninth and tenth trimesters. (This abstract reports on three consecutive trimesters of a journal club program.) Research and Learning Resource Center (LRC) staff and supervising clinicians were invited to attend in-services and journal

clubs. A practicing chiropractor and recent university graduate instructed the course. Research faculty were assigned mentoring roles for discussion. An information specialist videotaped presentations, distributed copies of papers, organized resources on an electronic platform, and developed electronic archives of topics, questions, and presentation files.

Students, separated into teams, based on their clinical shift over three trimesters, approached the selection and definition of a patient scenario, clinical question, literature search, paper selection, critical appraisal presentation and discussion as a team project, self-assigning roles. All team members participated in each journal club in all cases.

An assessment covering EBP knowledge, skills, attitudes and behaviors as well as students' needs, concerns, and perceptions was administered to interns beginning the ninth trimester and graduating tenth trimester interns. The final tenth trimester assessment included an evaluation of the completed two-trimester program as well as identification of graduates' needs and concerns regarding EBP and future practice.

One hour in-service lectures covering essential EBP concepts, searching skills and LRC/library resources, the journal club format and critical appraisal skills and a faculty led patient-based journal club were delivered to incoming interns. An electronic platform was utilized as a communication tool and resource archive. Instructional resources such as in-service lectures, a journal subscription list with passwords, database searching tutorials and links to LRC resources were posted. In addition, student-posed clinical questions, electronic files of papers and presentations, "P.O.E.M." format (Patient Oriented Evidence that Matters) summaries and an on-line forum of "clinical impact statements" posted on the electronic platform, organized and facilitated by the information specialist.

A meeting was instituted at the beginning of each academic trimester to summarize overall journal club activity of the journal clubs. E-mail notifications of journal club topics, papers and presenters were sent to the clinicians prior to each journal club as a reminder.

Results

A total of 95 interns (28 in Fall 2006, 26 in Spring 2007, and 41 in Summer 2007) were separated into teams, resulting in 27 student-led journal clubs. Students selected topics and developed clinical questions in various ways: personal experience/question (3), clinician or upper trimester interns suggestions (5), selection of topics applicable to the profession or of particular interest to the intern without a particular patient in mind (8), and using actual patient encounters (11).

The student concerns paralleled concerns of practicing physicians documented by Ely and others^{5, 20} and included resistance to a perceived absolute rule of research disregarding clinical expertise and patient values, lack of time to search and appraise the literature, lack of available resources and access to the literature, lack of critical appraisal skills, disruption of the focus on clinical hours, desire to be a “clinician” rather than a “researcher,” and applicability of research to real patient issues.

Each journal club, hosted by the instructor, was attended by at least one librarian and at least one research faculty. Following the first informational meeting with the supervising clinicians after the first trimester, 66% of the clinicians attended subsequent student-led journal clubs. At least one supervising clinician attended 78% of the journal club presentations in the second trimester of the program, and 100% were attended by at least one supervising clinician once reminders containing specific information were e-mailed.

The course instructor encouraged current (six months or less), peer reviewed papers, but left the actual selection up to the students. All twenty-seven (27) articles were chosen from peer-reviewed journals. Twenty-two (22) papers were recent (< 5 years old), three (3) were of moderate age (5-10 years), and two (2) were considered old (> 10 years). Ninth trimester students (47%) expressed the most frustration with determining a topic, and searching the literature. Most interns were not confident regarding finding a relevant, high quality papers or accessing full text.

Papers were located by: a search of PubMed (16), using an internet search engine (7) including Sirius (www.scirus.com) and Google Scholar (<http://scholar.google.com>), from a clinician or colleague (3) or using the Cochrane Database of Systematic Reviews (1).

While papers presented during the first trimester of the journal club program were not necessarily actual-patient based, research papers chosen in the third trimester since the course launch, usually under the guidance of supervising clinicians, were more current and applicable to the students' clinical experience.

Papers were accessed or obtained through electronic free full text (6), LRC subscriptions using online access or print copies (13), clinician or colleague (3), database links and electronic subscriptions on a private or institutional website (1), or through unspecified means (4).

Although the presenting interns were all completing their DC, only ten (10) papers centered on chiropractic medicine. Other topics included acupuncture (4), nutritional supplements (6), general nutrition (2), emerging technologies (e.g., laser treatments) (4), general medicine (1), internal medicine oriented (11), musculoskeletal (15) or were animal studies (1).

Four (4) qualitative and twenty-three (23) quantitative papers were chosen. Randomized Controlled Trials (RCT) were selected for ten (10) journal clubs. Other study designs included

cohort (3), systematic reviews or meta-analyses (8), and case studies, case series and feasibility studies (10). Twenty-five (25) of the papers focused on therapies while seven (7) were related to mechanism of action studies (some papers were both). At least 24% of the discussions supported therapies or initiated new therapies in the clinic.

Providing full text as an accessible electronic file, posting hard copies on bulletin boards in each clinic and distributing copies at the journal club did not seem to increase interns' tendency to read the papers prior to the journal club. Tenth trimester interns read the papers more frequently (verbal acknowledgement) than the ninth trimester students who focused on the papers their team presented.

Once interns were introduced to journal clubs and experienced several presentations and discussions, resistance to participation decreased. Eighty-three percent (83%) of the beginning ninth trimester interns in Spring 2007 expressed resistance to or concern with EBP while 58% of the same class in Summer 2007 at the end of their tenth trimester internship and after completing the two trimester program expressed similar resistance and concerns, a decrease of 25%. Twenty-two percent (22%) of graduating students expressed interest in participating in a post-graduate journal club, and 30% commented that the journal club course added value to their clinical experience. Preliminary analysis of assessment questions related to EBP skills and knowledge did not indicate an increase in specific competencies with the minimal instruction provided.

Conclusions

The evidence-based, CAM oriented, internship integrated journal club is EBP in short, and is something most interns in this program never experienced prior to this course. Initial resistance

and student concerns were addressed by providing basic instruction in searching and critically appraisal skills, holding the journal clubs within shift hours in a convenient place and providing lunch for the interns and clinicians. Participation by the LRC librarians, research faculty and supervising clinicians provided essential mentoring for the critical appraisal, discussion and determining the clinical impact and was well-received.

Steps were taken to allay concerns regarding access to the full text of research papers. Many interns were not aware of available electronic resources providing access to the research literature. An in-service demonstrating resources such as the LRC catalogues , databases and subscriptions was among the required for the incoming interns. This university resources orientation is now provided earlier (second trimester) in the curriculum. Concerns with finding and accessing the full text of the literature decreased by the end of the two-trimester program, but 14 % of the graduating students still expressed concerns regarding access to the literature when in practice.

Wireless internet access was provided in each clinic. In two clinics, new, faster computers and printers were provided. IP address recognition was added to several key journal subscriptions. A password and access list for subscriptions was distributed and linked into the electronic platform. Video and audio podcasts of archived journal clubs provided example. Organization on the electronic platform provided accessibility to university clinic based interns as well as community based preceptors. As the program progressed and resources such as journal club examples, critical assessment checklists, PowerPoint and P.O.E.M. templates and examples were developed and used, interns tended to choose more current and relevant papers.

The initial organization and format of the evidence-based, CAM-oriented journal club during the internship of a DC program has been successful in increasing exposure to, appreciation of

and use of research literature to support clinical decisions. Interns' attitudes toward using EBP skills as part of their clinical decision making became more positive after two trimesters of participation, and resistance to participation decreased dramatically over the three trimesters of the program. Using the initial information and data from the assessment of the interns over two trimesters, improvements are underway to provide more structured instruction and demonstration, more complete archiving of high quality journal club presentations as podcasts, and, possibly, to increase the frequency of the student-led journal clubs as well as increase participation through real-time webcasting.

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