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Advancing Integration Through Evidence Informed Practice: Northwestern Health Sciences University's Integrated Educational Model

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Abstract

A consistent theme running through the healthcare debate is the need for new care models that include collaborative, team-based care. There is also growing recognition that interprofessional education is critical to achieving collaborative, patient-centered care. Not unlike conventional, biomedical professions, CAM (complementary and alternative medicine) professions have also educated students in silos with little interaction between various disciplines. Northwestern Health Sciences University, under their NIH NCCAM-funded R-25 grant, is breaking new ground in requiring that their students in chiropractic, massage, and OAM complete a common course in evidence informed practice. A previous *Explore* column described the core competencies that the students are required to achieve. This column focuses on the practicalities and challenges of offering a course to students enrolled in three different degree programs. Perhaps it will stimulate readers to consider how we might achieve interprofessional education that brings together all health professional students, biomedical and CAM.

Integrative healthcare has become increasingly popular, with multiple health disciplines working together to provide effective patient care. To successfully work together, health providers from different backgrounds require opportunities to develop understanding and respect for each others' skills and approaches. However, even among complementary and alternative medicine (CAM) professionals, learning and working together in integrated ways can be challenging due to differing philosophical and historical perspectives.

Evidence-based or evidence-informed practice (EIP) can provide a foundation that can unify health professions. Northwestern Health Sciences University (NWSU), home to chiropractic, acupuncture, and Oriental Medicine (AOM) and massage therapy, is currently engaged in a multifaceted research educational program (R-25AT003582). Funded by the National Center for Complementary and Alternative Medicine, the overall goal is to facilitate EIP among CAM practitioners. Entering its fifth year, the program has successfully capitalized on identifying other institutional priorities that can work in synchronous and mutually advantageous ways. One example is NWSU's emerging focus on the professional integration of health-care providers.

As part of the R25 research education program, we developed EIP competencies and learning objectives for NWSU's academic programs. During the process, it became apparent that the principles of EIP could serve as integrating factors for multiple health care programs. Indeed, identical EIP-related competencies were adopted by two of the three NWSU CAM programs (chiropractic and AOM). Developed with extensive input from students, faculty, and practitioners from both professions, the EIP competencies represented a common set of best practices in which research can be used to inform patient care. These include efficiently finding, appraising and applying relevant research in concert with patient

preferences and clinical expertise.¹ Thus, we proposed to transform newly created Foundations of Evidence Informed Practice courses (developed individually for each academic health program in the early stages of the R25) into an integrated course. This would result in an initiative that addressed two important institutional priorities: integration of health professions and teaching evidence informed practice in a complementary and sustainable fashion.

The purpose of this paper is to describe our approach to create NWH SU's first fully integrated course, in which chiropractic and AOM students are educated together in evidence informed practice.

ANALYSIS

A key feature of our R25 educational program is the employment of the classic ADDIE instructional development model² focusing on systematic analysis, design, development, implementation, and evaluation. Thus, prior to designing an integrated course, we undertook an analysis to identify perceived and real challenges to integrating students from multiple programs. Our analytical approach included meetings and interviews with existing EIP course instructors for chiropractic and AOM, as well as academic program administrators. The existing foundational EIP courses were also audited by the course instructors and the project's instructional designer. Through our analysis we identified the most significant issues that would need to be addressed in the design, development, and implementation of a new integrated class; these were culture and class size, and professional relevance.

Culture and Class Size

Issues related to the existing culture, both institutionally and program-specific, and their interrelationship to class size, were identified as the greatest perceived challenges in creating a successful integrated course.

Northwestern Health Sciences University started as Northwestern College of Chiropractic in 1941, and it was not until 1999 that the institution diversified to include other programs. Currently, the chiropractic program is the largest at the University, and it is often referred to institutionally as the "flagship" program. There was concern that classroom integration might cause students from the smaller AOM program to feel that their program was being "taken over" by the chiropractic program, which clearly has a more dominant presence on campus. Further, because the AOM curricula culminates in a Master's level terminal degree, versus the doctorate degree in chiropractic, concerns were expressed that a perceived professional inequality could negatively affect AOM student learning. It was important that the class environment did not become "divided" along program lines.

There was also the obvious issue of class size, which presented challenges not only in pragmatic classroom management but in creating a culture that fostered integration. First, it is notoriously more difficult for instructors to connect with students in large classroom environments; this was recognized as a potential hindrance to the type of collaborative learning environment deemed necessary for students to integrate. Also, larger student numbers require more instructor time to offer authentic assessments and provide quality feedback. There was also the issue of the relative size of the programs, with AOM students accustomed to smaller, more intimate classes (20–30 participants), and chiropractic students regularly participating in large classes of up to 140 participants. This led administrators to question whether the AOM students would somehow feel "second rate" due to the fact that the chiropractic students would consistently outnumber the AOM students within the class. Finally, there was concern by all parties that the individualized mentorship AOM students

were routinely afforded by instructors in their program would be missed in the larger class environment.

Professional Relevance

A key concern was whether or not a class could be taught in a manner that both chiropractic and AOM students would find to be clinically relevant. It was feared that content specific to either profession might hinder motivation and learning of students from the other program. During the analysis phase, it was decided that the instructor of the existing chiropractic EIP course would serve as the lead instructor for the integrated course. Thus, a key part of the analysis, was having the instructor of the existing AOM course (and an AOM provider) audit the chiropractic course for an entire trimester to assess its relevance to her discipline. Individual class observations were also made by the instructional designer. Overall, the existing class structure and lesson plans were judged to be appropriate for the AOM students. However, areas for modification were identified, to ensure the course was relevant to all students. These were related to class examples and case studies as well as the required reading of research articles necessary for several assignments related to the practice of EIP.

DESIGN, DEVELOPMENT, AND IMPLEMENTATION

Based on the analysis described above, an instructional designer worked alongside the lead course instructor, as well as other members of the R25 team, to design and develop lesson plans and the strategic implementation of a new integrated Foundations of Evidence Informed Practice course. The main strategies used to address the needs and concerns identified in the analysis are outlined in Table 1 and are described below.

Culture and Class Size

Our key goal for addressing culture and class size related issues was to create a truly integrated classroom environment in which all students, regardless of their professional program, felt respected and comfortable. The lead instructor shared this goal with students at the beginning of the term. Further, despite the large class size (>120) we aimed to employ instructional strategies that would not only foster integration between students, but also allow students to practice essential skills.

One of the main strategies we used to facilitate the integration of students was carefully designed group work that fostered connection and collaboration, while minimizing the unequal representation of AOM and chiropractic students. We offered a variety of group formats, including instructor assigned and student-selected groups, to ensure a balance of autonomy and “forced integration.” Instructor assigned base groups consisted of four to five students, with at least two students from the AOM program. This ensured representation of both professions while ensuring no one student from the under-represented group was put in a group by him or herself.

To facilitate collegiality within groups, we introduced specific exercises on group etiquette, conflict resolution, and establishing personal connections. We defined roles in groups (eg, facilitator, contrarian, recorder, reporter) to engage all group members. After group discussions, we encouraged groups to share key points with the entire class to ensure a broader dissemination of professional viewpoints. Group activities were intended to provide an opportunity for students to develop critical thinking skills, and work collaboratively in an integrated fashion, while applying evidence informed practice principles within the context of clinical scenarios. Some of the group work was also designed to provide authentic assessments, for example, the critical appraisal of a research article. This provided students a valuable opportunity to practice key skills, while reducing instructor workload. In addition, some of the work was graded as a group to encourage collective responsibility.

Professional Relevance

Professional relevance for all students was made easier by the “universal aspects” of EIP content. Instructors also made concerted effort to keep discussions patient-centered rather than profession centered. The team developed guidelines to help the instructors select classroom examples, case studies, and assignments relevant to all health professionals. For example, in a discussion on randomized clinical trials, studies selected represented a range of promising treatment approaches for headache instead of focusing on research concerning treatments only used by chiropractic or AOM providers. When an example from a specific profession was used, it was a deliberate effort to foster students’ interest in other health professions, and encourage exploration of how different health providers can work together to provide the best patient care. In addition, three teaching assistants, two chiropractors and one AOM clinician, modeled EIP-related clinical behaviors in professionally relevant ways.

EVALUATION

Evaluation of our ability to successfully integrate the two student groups was done quantitatively (via survey and grade distribution) and qualitatively (through instructor observations). The survey was designed to address the main concerns identified in our original analyses (see Table 2 for questions posed and response options).

A total of 115 of 129 (90%) registered students completed the survey, 16 of 17 (94%) AOM students and 99 of 112 (88%) chiropractic students. Detailed results are displayed in Table 2. Overall, 50% or more of students agreed or strongly agreed with seven of eight statements indicating a generally high degree of enthusiasm for the integrated aspects of the course and integration of professions in general. One statement “As a result of this class, I am more interested in a collaborative practice with providers from different professions” yielded slightly more neutral responses, with 45% agreeing/strongly agreeing, 36% responding as neutral, and 19% disagreeing/ strongly disagreeing. Statements for which there were the most agreement were related to feeling comfortable sharing thoughts and opinions in class (80% strongly agreeing or agreeing), and the examples given in class represented the students’ profession adequately (83% strongly agreeing or agreeing). There was a greater tendency for the AOM students to agree with the statements, suggesting they may be slightly more inclined toward classroom integration. However, given the small sample of AOM students, this interpretation should be applied cautiously. Student performance between the two programs was comparable with 85% (95 of 112) of the DC and 88% (15 of 17) of the AOM students receiving As or Bs.

Instructors described similar levels of student discussion and enthusiasm surrounding examples used in class regardless of professional affiliation. When given a choice of articles to critically appraise, many students chose to appraise articles that examined interventions commonly used outside their professions. Instructors observed students participation and collaboration within the base groups to be uniform regardless of profession.

CONCLUSION

All health providers are being challenged to stay current with high-quality research and apply it to clinical care. Courses focused on developing the essential skills for achieving evidence informed practices can provide the ideal venue for different provider types to learn together, and build the foundations for future professional collaborations. We found that with careful attention to analysis, design, development, and implementation, it is possible to create a class that transcends professional differences and successfully integrates students from different CAM programs even with unequal student numbers. Importantly, we were able to meet a main goal of ensuring students felt respected and comfortable regardless of

professional affiliation. Systematic approaches similar to what was described in this paper could be readily applied to the educational integration of a variety of CAM and conventional health care professionals.

References

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Biographies

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Table 1**Goals and Strategies for Integrating Chiropractic and AOM Students**

Need/Issue	Goal	Strategy
CULTURE and CLASS SIZE	Create a truly integrated classroom environment in which students feel comfortable and respected regardless of parent program, and could participate in meaningful learning experiences	Used group work to facilitate integration Designed lesson plans to ensure professional relevance (see below)
PROFESSIONAL RELEVANCE	Design and develop course in a manner that adequately represents both professional perspectives	Shared objectives of integration with students at start of class Instructor for existing AOM course audited chiropractic course; assess for commonalities/differences Involved representatives from both professional groups, as well as “neutral” instructional designer in design of course Created guidelines for classroom examples, case studies, and assignments to ensure relevance to all students Stressed the “universal aspects” of EIP content, regardless of professional affiliation in class content; made concerted effort to keep examples and discussion patient-centered rather than profession centered. Assigned teaching assistants from both chiropractic and AOM professions to assist with group facilitation, teaching, and grading

Table 2

Survey Results

Question	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly Disagree n (%)
I learned useful information about the other healthcare profession in the class.					
AOM	2 (13)	10 (63)	4 (25)	0 (0)	0 (0)
Chiro	3 (3)	62 (63)	18 (18)	11 (11)	5 (5)
All	5 (4)	72 (63)	22 (19)	11 (10)	5 (4)
The class dialogue was enriched because there were students from different professions.					
AOM	5 (31)	7 (44)	2 (13)	1 (6)	1 (6)
Chiro	6 (6)	39 (39)	33 (33)	17 (17)	4 (4)
All	11 (10)	46 (40)	35 (30)	18 (16)	5 (4)
Working in groups in class helped me understand and apply the content.					
AOM	2 (13)	9 (56)	3 (19)	1 (6)	1 (6)
Chiro	7 (7)	41 (41)	21 (21)	22 (22)	8 (8)
All	9 (8)	50 (44)	24 (21)	23 (20)	9 (8)
As a result of this class, I am more interested in working in a collaborative practice with providers from different professions.					
AOM	3 (19)	7 (44)	4 (25)	1 (6)	1 (6)
Chiro	5 (5)	37 (37)	37 (37)	17 (17)	3 (3)
All	8 (7)	44 (38)	41 (36)	18 (16)	4 (4)
I am interested in having more integrated classes at NWHHSU.					
AOM	6 (38)	6 (38)	3 (19)	1 (6)	0 (0)
Chiro	8 (8)	37 (37)	33 (33)	11 (11)	10 (10)
All	14 (12)	43 (37)	36 (31)	12 (10)	10 (9)
Examples given in class were relevant to clinical practice.					
AOM	6 (38)	5 (31)	4 (25)	1 (6)	0 (0)
Chiro	16 (16)	69 (70)	10 (10)	3 (3)	1 (1)
All	22 (19)	74 (64)	14 (12)	4 (4)	1 (1)
Examples given in class represented my profession adequately.					
AOM	3 (19)	10 (63)	2 (13)	1 (6)	0 (0)
Chiro	12 (12)	71 (72)	10 (10)	4 (4)	2 (2)
All	15 (13)	81 (70)	12 (10)	5 (4)	2 (2)

Question	Strongly Agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly Disagree n (%)
I felt comfortable sharing my thoughts and opinions with other students in the class.					
AOM	6 (38)	7 (44)	3 (19)	0 (0)	0 (0)
Chiro	17 (17)	62 (63)	14 (14)	3 (3)	3 (3)
All	23 (20)	69 (60)	17 (15)	3 (3)	3 (3)