St. Catherine University and North Memorial Medical Center conducted an Interprofessional Clinical Scholar Program (ICSP) involving five teams of staff, students, and faculty. The aim of the case study was to determine how the interprofessional teams implemented evidence-based projects. We triangulated data from interviews, field notes, and surveys to produce themes: learning to value interprofessional teams, working as a team, and being evidence-based practitioners. We found significant differences pre- and post-ICSP on the Attitudes Toward Interprofessional Teamwork and Education scale, $t(14) = -5.48, p < .005$, and the Terminology subscale of the Evidence-Based Practice Profile, $t(15) = -4.04, p = .001$. We found no change in scores on the Evidence-Based Practice Belief Scale, $t(14) = -1.49, p = .156$. The study supported predicted patterns of benefits from ICSP. Not all participants benefited because of variability in attendance.


Evidence-based practice (EBP) is a critical skill taught in occupational therapy professional-level education (DeAngelis, DiMarco, & Toth-Cohen, 2013). Evidence-based practice courses cover question formation, search for and appraisal of evidence, and synthesis of practice change recommendations, but they may not offer students the opportunity to apply their synthesized EBP recommendations in practice (Caldwell, Coleman, Copp, Bell, & Ghazi, 2007) unless fieldwork experiences include these opportunities. One challenge for current EBP models is translating research into practice. Translation science emphasizes taking research from the bench to the bedside (Green, 2012). Implementation science is a form of translation science addressing human and organizational inertia and the resource constraints inherent in practice. Cramm, White, and Krupa (2013) advocated for occupational therapists to use translation science or risk being on the periphery of health care transformation.

Another challenge for current EBP models is the need to move from emphasizing disciplinary-focused practice to tackling patient problems with a team approach (Zwarenstein & Reeves, 2006). A single-discipline approach to using EBP may not consider barriers to practice change that might occur because of interprofessional relationships. Therefore, St. Catherine University and North Memorial Medical Center in Robbinsdale, Minnesota, collaboratively developed the Interprofessional Clinical Scholar Program (ICSP) to increase staff’s, students’, and faculty’s expertise in EBP inclusive of practice change implementation. Other goals were to incorporate the perspective of multiple disciplines into examining patient care questions pertinent to the health care organization and to develop EBP mentors skilled in leading interprofessional teams. The first three authors of this article (Moyers, Finch Guthrie, and Swan) served as the project coordinators and participated with the teams in developing their projects. The
last author (Sathe) conducted the team member interviews and did not participate in the ICSP.

Literature Review

Health care professionals continue to report difficulty engaging in EBP as a part of their routine practice (Melnyk & Fineout-Overholt, 2012). Salls, Dolhi, Silverman, and Hansen (2009) indicated that occupational therapists had positive attitudes toward EBP as a result of their entry-level education but did not have time to use these practice skills. Likewise, Brown et al. (2010) determined that attitudinal and knowledge barriers to research only partially explained nurses’ difficulty in implementing EBP and that system inertia created more barriers. Nursing clinical scholar programs (Hockenberry, Brown, Walden, & Barrera, 2009) in acute care require nurses to attend an EBP course (Brewer & Schultz, 2010) and to engage in an EBP project (Steurer, 2010) under the guidance of a mentor (Mariano et al., 2009).

Unfortunately, few acute care organizations have implemented recommendations from the EBP projects arising from clinical scholar programs (Fineout-Overholt & Johnston, 2006) because of various factors, such as lack of leadership champions and feasibility problems. Novak and McIntyre (2010) demonstrated that EBP recommendations within occupational therapy were implemented when managers facilitated practice-change work groups, rewarded engagement in EBP, and removed barriers. Melnyk, Fineout-Overholt, Giggleman, and Cruz (2010) determined that the availability of staff mentors was a key factor in ensuring EBP occurs in a health care organization. Haas (2008) found that mentors who were themselves inadequately trained in EBP had a negative influence on nurses engaging in EBP. Carefully preparing mentors to understand team dynamics, roles, and communication enhances their leadership for facilitating the complete EBP process of interprofessional teams (Zwarenstein & Reeves, 2006). Creation of partnerships between academia and health care organizations maximizes resources, thereby decreasing the cost of supporting EBP or offsetting lack of mentor expertise (Salls et al., 2009). The issues identified in the literature support studying the ICSP because of its inclusion of organizational partnerships, multiple disciplines, mentor training, and use of implementation science.

The purpose of this study was to investigate the EBP experience of staff, faculty, and students participating in the ICSP. The main case study question was, How do interprofessional teams implement EBP projects? The three subquestions used to derive the answer to the main case study question were (1) What is the experience of the mentors and team members in the ICSP? (2) What are the outcomes of the individual EBP projects within the ICSP? and (3) What is the scholarly productivity of the ICSP teams?

Method

Research Design

The project coordinators conducted a project evaluation using an explanatory single-case study design with the interprofessional teams in the ICSP as the unit of analysis. For the case study, we predicted that the experience of ICSP mentors, scholars, and team members would produce a pattern in which knowledge of and beliefs in EBP and attitudes toward interprofessional teams and interprofessional education would become stronger. Institutional review boards for the protection of human participants from both St. Catherine University and North Memorial Medical Center approved the proposal, and team members consented to participate.

Participants

A total of 37 participants were in the ICSP and consisted of staff from North Memorial Medical Center and faculty and students from St. Catherine University. The hospital serves a culturally diverse patient population in north Minneapolis and is staffed for an average daily census of 250–279 patients. The hospital publicized the ICSP to encourage staff nurses to submit proposals for a 1-yr or 6-mo project on the topic of pain management and patient comfort as a result of hospital leaders wanting improvement in patient satisfaction. Of 10 proposals, the hospital research committee selected 6 according to the project’s relevance to the organization’s mission and quality improvement priority. The selected clinical nurse scholars were paired with five mentors who were advanced practice nurses or nurse educators. Because two of the proposals had similar topics, one team had two scholars. Faculty who volunteered after receiving universitywide announcements were asked to encourage students to contact the project coordinators if they wanted to participate. Because of the small number of participants, the only demographics gathered were the disciplines on each team.

Intervention

The ICSP, which began on January 12, 2012, and ended on December 31, 2012, was based on the Iowa Model of Evidence-Based Practice to Promote Quality of Care (Titler et al., 2001, p. 500). The interprofessional team members attended a bimonthly clinical scholar day involving EBP classes, team meetings, and work time. The project coordinators ran the classes, which covered the following topics:
(1) an overview of EBP, (2) writing an EBP question, (3) searching the literature, (4) appraisal and synthesis, (5) implementation science, (6) evaluation, and (7) leadership of EBP. North Memorial Medical Center paid their nursing scholars and mentors for these clinical scholar days as part of their work schedule. Andrews and Chilton’s (2000) model of mentorship guided the project coordinators during meetings and workshops to develop the mentors’ interprofessional team competencies (Interprofessional Education Collaborative Expert Panel, 2011). These meetings and workshops were held separately from the regular interprofessional team meetings.

**Data Collection**

We used Yin’s (2014) case study method, which requires multiple sources of evidence to enhance validity and maintain a chain of evidence through audit trails. The last author (Sathe), who was independent of the ICSP, conducted 37 semistructured interviews, 1 per team member. A program coordinator who was not responsible for mentor development conducted eight semistructured mentor interviews. Other data sources included mentor and program coordinator field notes and interprofessional team member responses to three surveys administered before and after the ICSP. Team productivity was measured as publications, presentations, and grants.

The interviews with the team members occurred when the scholar, student, or faculty member completed his or her time on the project. Interview questions were as follows:

- Describe your overall experience in being in the program.
- In what ways has the program met your expectations, and in what ways did it not meet your expectations?
- Describe your experience in actually implementing and evaluating the project.

The interviews were audiotaped and transcribed, and the interviewer took field notes during the interviews.

The Minnesota Nursing Association Foundation funded the mentor component of the program evaluation. The first two interviews of each mentor addressed such questions as “What has been your biggest challenge in mentoring?” “How did you use your mentoring strategies to address this challenge?” and “What has been the relationship between your mentoring strategies and your team’s development of interprofessional competencies?” Mentors reviewed their interview transcripts for accuracy. Subsequently, the mentors engaged in six other data-gathering sessions as a group with one of the project coordinators.

The Evidence-Based Practice Belief Scale (Melnyk et al., 2004) has participants rate on a scale ranging from strongly disagree to strongly agree their level of agreement with 16 items indicating confidence in their ability to engage in EBP. Melnyk, Fineout-Overholt, and Mays (2008) demonstrated that the Evidence-Based Practice Belief Scale achieved internal consistency with a Cronbach’s $\alpha$ of .90. The Terminology subscale from the Evidence-Based Practice Profile (McEvoy, Williams, & Olds, 2010) includes 17 essential concepts for EBP. Participants rank their understanding of these concepts on a 5-point Likert scale, with 1 indicating having never before heard the term “EBP” and 5 indicating ability to explain the concept to others. The Terminology subscale has acceptable internal consistency (Cronbach’s $\alpha = .94$) and test–retest reliability (intraclass correlation ranging from .67 to .86).

The Attitudes Toward Interprofessional Teamwork and Education scale (Curran, Sharpe, & Forristall, 2007) for faculty has three subscales, of which only one, Attitudes Toward Interprofessional Health Care Teams, was used in the final analysis because of the low number of participants ($n = 3$) who completed the post-ICSP surveys. This subscale is the same as that included in the student version of the survey (Curran, Sharpe, Forristall, & Flynn, 2008), which made it possible to combine the three completed faculty surveys with the student, mentor, and clinical scholar data. The Attitudes Toward Interprofessional Health Care Teams scale includes 14 items rated on a 5-point Likert scale ranging from strongly disagree to strongly agree. It has a Cronbach’s $\alpha$ of .80 for internal consistency (Curran et al., 2007). The Attitudes Toward Interprofessional Education subscale (Curran et al., 2008) was given only to students, mentors, and clinical scholars. It contains 14 items rated on a 5-point Likert scale and has a Cronbach’s $\alpha$ of .91 (Curran et al., 2008).

All 37 participants completed the three surveys before the start of the ICSP, and 18 completed the post-ICSP surveys. Although the number of post-ICSP surveys completed was substantially lower, the results were used because they represented the perceptions of core team participants and could be triangulated with the other data. Team documents included for analysis were each team’s EBP question, proposal and results of a practice change, and a list of the final project products. The teams also submitted documentation of scholarly activity.

**Data Analysis**

The general analysis strategy for the case study involved triangulation, pattern matching, and explanation building (Yin, 2014). To establish credibility in the interpretation of the participants’ experiences, we carefully noted the changes in team contexts occurring during the year (Marshall & Rossman, 1989). We initially analyzed each source of data for the first research subquestion separately. Preliminary
themes emerged from the qualitative data using a grounded theory approach, which Yin (2014, p. 138) described as useful when an inductive approach to data analysis is needed in a case study. Themes across mentor and participant interviews and field notes were then triangulated. Conflicts in interpretation during triangulation of themes were resolved through exploration of alternative explanations and through thematic sampling of interview transcripts and field notes (Strauss & Corbin, 1998).

We analyzed quantitative data from the standardized instruments using IBM SPSS Version 21 (IBM Corp., Armonk, NY), in which descriptive statistics were determined for the total score, subscale scores, and individual question responses for each of the three instruments. Paired \( t \) tests determined the differences in the pre- and postsurvey responses for the sample as a whole as well as for individual questions. The quantitative data were then examined to determine the support for the qualitative themes. Because the themes did not describe predicted outcomes for the case study, we then used pattern matching to deepen understanding of the themes (Yin, 2014). When the patterns did not match the predicted patterns, we explored alternative explanations as a part of the explanation-building process. To answer the second and third subquestions, we used data array tables to describe the team project outcomes and the scholarly activity.

Results

The 37 participants practiced the following academic disciplines: occupational therapy (\( n = 8 \)), nursing (\( n = 18 \)), holistic health (\( n = 4 \)), physical therapy (\( n = 2 \)), respiratory care (\( n = 3 \)), physician assistant (\( n = 1 \)), and exercise science (\( n = 1 \)). The participants in each role on the team were 13 faculty, 7 mentors, 6 nursing clinical scholars, and 11 students. Occupational therapy faculty or students were on four teams. Some students and faculty (\( n = 16 \)) left the EBP teams before project completion because of summer break or, in the case of students, graduation.

Subquestion 1: Experience of ICSP Team Members

The triangulation of the qualitative and quantitative data explicated three themes: participants learning (1) to value interprofessional teams, (2) to work as a team, and (3) to be evidence-based practitioners.

Theme: Learning to Value Interprofessional Teams

Team members, as noted from the interviews and field notes, developed an appreciation for the interprofessional team in creating an effective work process and a holistic view of the patient. Although the Attitudes Toward Interprofessional Teamwork and Education scale (Curran et al., 2007) is not directly related to EBP, the results indicated the participants’ value of interprofessional practice and learning. We found significant differences between the pre- and post-ICSP surveys for each subscale (Attitudes Toward Interprofessional Health Care Teams and Attitudes Toward Interprofessional Education) and for the total survey score (see Table 1).

Specific questions from the Attitudes Toward Interprofessional Health Care Teams subscale (Curran et al., 2007) determined that working with a team did not complicate work, presurvey mean (\( M_1 \)) = 3.94, standard deviation (\( SD \)) = 0.54; postsurvey mean (\( M_2 \)) = 4.56, \( SD \) = 0.51; \( t(17) = -4.267, p = .001 \), and did not take unnecessary time, \( M_1 = 3.94, SD = 0.54; M_2 = 4.50, SD = 0.52; t(170) = 3.344, p = .004 \). The team member interviews provided examples of discovering that teamwork was helpful in approaching difficult and novel work: “It doesn’t have to be difficult and time consuming to work with other professions and that you can do that in a positive way” (team member interviews); “I appreciate the fact that their discipline is different and that their focus in their discipline is different and that’s okay, their differences are going to make us stronger as a group” (mentor interviews).

Working in the EBP team broadened the understanding of patient care problems. Team members believed the differences in skills and perspectives contributed to the team’s strength: “I thought it was beneficial to talk about pain . . ., people’s perspective as far as occupational therapists’ view and things like that. And from the holistic health point of view as well” (team member interviews); “Appreciating (affirmation) and respecting each other, our varying roles with patients, and understanding our strengths. So many people need to be involved because there are so many intricacies” (mentor field notes).

Faculty and students brought a unique understanding of EBP and research, and mentors and scholars understood the clinical question and the nuances of the hospital in terms of developing the practice-change pilot: “Students have been contributing to the completion of the work. Students are engaged, energetic, and willing to take on tasks asked of them” (project coordinator field notes); “Teams were beginning to appreciate having faculty experts on content or process on their teams” (project coordinator field notes).

However, a rival pattern from enhanced interprofessional teamwork that teams struggled with was the sporadic attendance of some team members: “Some team members tended to have inconsistent attendance and then [had] the expectation for the team to spend time catching them up” (program coordinator field notes).

Changes in the responses to questions on the Attitudes Toward Interprofessional Health Care Teams subscale (Curran et al., 2007) pre- and post-ICSP indicated that a positive
experience improved the perception that health care teams are more likely to use a holistic approach for patient care needs, $M_1 = 4.06, SD = 0.99; M_2 = 4.66, SD = 0.50; t(17) = -2.263, p = .037$, and that a team would be more responsive to a patient’s emotional needs, $M_1 = 3.56, SD = 0.70; M_2 = 4.17, SD = 0.79; t(17) = -2.829, p = .012$. Program coordinator field notes from the aromatherapy teams indicated that having more interventions to address the patient’s pain was critical: “Managing pain in an adult trauma population is challenging. We need to use a variety of interventions to decrease the pain and anxiety that accompanies trauma including complementary therapy.”

**Theme: Learning to Work Together.** Mentors, clinical scholars, and students expressed appreciation for the opportunity to learn together in that we found a significant difference in the pre-ICSP and post-ICSP total scores on the Attitudes Toward Interprofessional Teamwork and Education subscale (Curran et al., 2008; see Table 1). Responses to a subscale question indicated that attitudes changed positively regarding the value of learning together as a factor in team communication, $M_1 = 4.20, SD = 0.68; M_2 = 4.45, SD = 0.64; t(14) = -4.036, p = .001$. Working together was facilitated when members acknowledged that each person played an important role, set clear expectations for participation, focused on tasks, and engaged in crucial conversations to solve problems: “If something isn’t working, pull together, and figure out another way to get it accomplished” (mentor field notes); “We had some bumps in the road but we became more of a safe ground for a person to [vent] her feelings” (mentor interviews).

The rating was higher after the ICSP for questions regarding the value of prelicensure interprofessional learning from the Attitudes Toward Interprofessional Teamwork and Education subscale (Curran et al., 2008). Responses indicated that interprofessional education may help students become better team members, $M_1 = 4.53, SD = 0.52; M_2 = 4.93, SD = 0.26; t(14) = -2.449, p = .028$, and improve relationships, $M_1 = 4.20, SD = 0.68; M_2 = 4.87, SD = 0.35; t(14) = -5.292, p < .005$, once in practice. The students valued being a part of the team even though, according to the interviews, team membership was initially somewhat intimidating. As extracted from the team member interviews, students noted how much the team members learned from each other, as well as how much they contributed to the team learning as a representative of their discipline: “I think the team primarily was made up of nursing, but because of the voice of OT and respiratory, I think it—there was awareness among nursing in particular about, you know, the other team roles” (student interview).

Some data indicated a rival pattern. The participants noted that team members’ understanding of the various roles of the interprofessional team was at times incomplete, leading to premature decision making and interference with the team moving the project forward: “There was a lot of posturing . . . that was related to typical professional roles but I do think that the OT piece could’ve been stronger” (student interview); “Teams continue to want to rush to action before clear decisions are made” (project coordinator field notes).

**Theme: Learning to Be Evidence-Based Practitioners.** The change in the Terminology subscale score from the Evidence-Based Practice Profile (McEvoy et al., 2010) provides evidence that learning about EBP occurred for participants (see Table 1). Increasing familiarity with the concepts of systematic reviews and meta-analyses probably resulted from their emphasis in the course, as well as from encouragement to appraise these studies. In regard to the concept of publication bias, some of the clinical scholars and students shared that before the ICSP, they believed that if a study was published, it was a good study.

Team members reported the value of the EBP course sessions and found that learning in teams about the appraisal

**Table 1. Quantitative Case Study Results**

<table>
<thead>
<tr>
<th>Survey Instrument</th>
<th>Sample (n)</th>
<th>Pre-ICSP Mean (SD)</th>
<th>Post-ICSP Mean (SD)</th>
<th>$t$ (df)</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-Based Practice Belief Scale (Melnyk et al., 2004)</td>
<td>15 faculty, students, scholars, and mentors</td>
<td>58.6 (7.43)</td>
<td>62.5 (9.09)</td>
<td>-1.49 (14)</td>
<td>.156</td>
</tr>
<tr>
<td>Terminology subscale of the Evidence-Based Practice Profile</td>
<td>16 faculty, students, scholars, and mentors</td>
<td>46.0 (8.70)</td>
<td>57.4 (9.71)</td>
<td>-4.04 (15)</td>
<td>.001</td>
</tr>
<tr>
<td>Attitudes Toward Interprofessional Teamwork and Education Scale</td>
<td>15 students, scholars, and mentors</td>
<td>119.6 (9.06)</td>
<td>129.3 (8.26)</td>
<td>-5.48 (14)</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Total score</td>
<td>18 faculty, students, scholars, and mentors</td>
<td>56.3 (5.06)</td>
<td>60.8 (4.24)</td>
<td>-3.89 (17)</td>
<td>.001</td>
</tr>
<tr>
<td>Attitudes Toward Interprofessional Health Care Teams subscale</td>
<td>15 students, scholars, and mentors</td>
<td>63.9 (4.78)</td>
<td>68.2 (4.55)</td>
<td>-5.17 (14)</td>
<td>&lt;.005</td>
</tr>
<tr>
<td>Attitudes Toward Interprofessional Education subscale</td>
<td>15 students, scholars, and mentors</td>
<td>58.6 (7.43)</td>
<td>62.5 (9.09)</td>
<td>-1.49 (14)</td>
<td>.156</td>
</tr>
</tbody>
</table>

*Note: df = degrees of freedom; ICSP = Interprofessional Clinical Scholar Program; SD = standard deviation.*
process was reassuring: “It seemed reviewing articles and completing appraisal forms as a team decreased anxiety levels about appraisal” (project coordinator field notes); “I think those speakers were really, really valuable, you know their lectures and their experience was really, really educational and very interesting” (team member interviews).

The mentors recognized their value in leading the interprofessional team’s EBP learning: “It’s in the doing that you learn the process of evidence-based practice. To do [it] really, you need to mentor and need to continue to be a mentor” (mentor interviews).

Contrary to the predicted pattern, some teams were frustrated with the fast pace of the ICSP and at times were confused about the difference between EBP and research. This confusion was particularly evident as teams developed their EBP question. Team members wanted to incorporate too many variables, in the manner one would when writing a research question. They inadvertently narrowed their literature searches, making it difficult to find studies for appraisal: “What I observe is that each team member brings in so many what ifs’ and variables in the discussion that they all seem to get lost in the process” (project coordinator field notes); “The team had trouble understanding the difference between an evidence-based practice question and a research question” (project coordinator field notes).

Evidence for an alternative pattern was that there was no change in score on the total Evidence-Based Practice Belief Scale (Melnyk et al., 2004; see Table 1). There may have been a ceiling effect because the high pre-ICSP scores indicate preexisting positive beliefs about EBP. We found changes in scores for specific survey questions, supporting the predicted pattern.

**Subquestions 2 and 3: Project Outcomes and Interprofessional Team Productivity**

The results addressing the second case study subquestion include the actual interprofessional team outcomes and project products, described in Table 2. Five of the year-long projects tested or implemented interventions, and the 6-mo project provided practice recommendations based on analysis and synthesis of the literature. Four of the year-long projects (i.e., the three aromatherapy projects and the project involving pain assessment for ventilated, sedated patients) received grant support from the Minnesota Nurses Association Foundation, and a fifth project (i.e., the chronic pain project) received a pilot grant from St. Catherine University. The back pain postangioplasty project was a 6-mo project for which no grant support was sought.

The four teams piloting interventions incorporated essential drivers of implementation in the design of their projects (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005). Specifically, each of the four intervention teams used the implementation drivers of developing strong leadership support, incorporating staff coaching and consultation, providing resources and tools, developing intervention protocols, and monitoring intervention implementation for fidelity. The team products after project completion included five national and five local conference presentations, along with three national and two regional poster sessions.

**Discussion**

The aim of the case study was to answer the following main question: How do interprofessional teams implement evidence-based projects? Team members learned to value interprofessional teams, work together, and be evidence-based practitioners. Team learning was necessary to develop and implement the projects, mentor fellow team members, and create scholarly products. Each step of the EBP process created opportunities for team members to collaborate and assume leadership on the basis of their expertise. Working in interprofessional teams expanded understanding of the practice problem, broadened knowledge of interventions, and created a holistic perspective for patient care.

Few of the nursing clinical scholar programs reviewed in the literature reported that participants eventually presented their projects nationally. One of the programs in which the nurses were productive in scholarship was designed as an advanced program targeting the nurse leaders of a health care organization (Cullen, Titler, & Rempel, 2011). In another program that involved staff nurses, the publications did not occur for almost 3 yr after the 6-mo program (Soukup & McCleish, 2008). In contrast, the scholarly productivity of the ICSP teams occurred within 6 mo after program completion. Perhaps ICSP occurring over 1 yr and involving teams in which the project work could be shared contributed to the high rate of scholarly presentations and grant obtainment. Mariano et al. (2009) found that nurses working in the neonatal intensive care unit after EBP mentoring showed no change in scores on the Evidence-Based Practice Beliefs Scale (Melnyk et al., 2004). The ICSP participants also showed no change in EBP beliefs; however, in both studies, the participants implemented practice change, suggesting that EBP beliefs were supportive and that perhaps the instrument had a ceiling effect.

Burke and Gitlin (2012) advocated for occupational therapists to incorporate implementation science principles within EBP to actively change practice. These implementation principles of developing strong leadership support, incorporating staff coaching and consultation, and designing intervention protocols contributed to the
Table 2. Outcomes of Evidence-Based Interprofessional Team Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Method and Sample</th>
<th>Results</th>
<th>Products</th>
</tr>
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</table>
| Effects of essential oils on pain for trauma patients                  | Experimental design, placebo  
\( N = 56; \text{control } n = 30, \text{intervention: lavender, } n = 17, \text{marjoram } n = 9 \) | The regression (GLM) model for average posttest pain (measured with a visual analog self-rating scale including prepain score and age as covariates) showed an adjusted \( R^2 \) of .763 (\( p < .001 \)). Contrasts for the aromatherapy oils (jojoba as placebo, marjoram, and lavender) showed marjoram had lower posttest pain scores (\( p = .048 \)). | Aromatherapy protocol for trauma patients  
Use of individual aromatherapy inhalers |
| Use of aromatherapy for relieving abdominal pain in the emergency department | Experimental design  
\( N = 33; \text{control } n = 17, \text{intervention } n = 16 \) | The regression (GLM) model for average posttest pain (visual analog self-rating scale with prepain score and gender as covariates) had an adjusted \( R^2 \) of .837 (\( p < .001 \)). Contrasts for the aromatherapy oils (jojoba as placebo, lavender, and mandarin) showed the mandarin group had lower posttest pain scores (\( p = .033 \)). | Aromatherapy protocol for the emergency department  
Use of individual aromatherapy inhalers |
| Back pain postangioplasty                                              | Literature review appraisal and synthesis  
Nurses’ attitudes toward, beliefs about, and knowledge of chronic pain  
\( N = 52 \) nurses | Evidence-based practice recommendation to decrease time with sheath placement postprocedure from 6 to 4 hr | Recommended changes to patient orders  
Learning modules and materials  
Chronic pain protocol |
| Assessment of pain in ventilated, sedated patients                    | Case study  
\( N = 3 \) patients on ventilators receiving sedation | Themes: (1) Standardized pain assessment leads to more consistent pain management, (2) consistent pain management leads to decreases in sedation, and (3) decreases in sedation lead to weaning off of mechanical ventilation. | Behavioral Pain Assessment  
(Gélinas, Fortier, Viens, Fillion, & Puntillo, 2004) in Electronic Health Record |
| Feasibility study using aromatherapy preoperatively                    | Experimental design, placebo  
\( N = 70; \text{control } n = 37, \text{intervention } n = 33 \) | Preoperative administration of ginger and lavender combination vs. jojoba placebo resulted in a decrease in mean postoperative nausea scores (0.74 vs. 0.95), not significant (\( p = .58 \)). | No support for adoption preoperatively  
No practice change |

Note. GLM = generalized linear model.

Success of the ICSP teams in facilitating practice change. The use of mentors and paid scholar time in the ICSP confirmed the workplace supports needed to support professionals in changing practice (Novak & McIntyre, 2010). Additionally, the ICSP supported Zwarenstein and Reeves’ (2006) hypothesis that implementation of changes in the practice of one profession seldom occurs without active engagement from other professions (p. 52). The ICSP interprofessional project teams described developing more holistic patient care solutions.

The limitations of the ICSP program evaluation not only involved the low post-ICSP return rate of the surveys in general and of faculty in particular, but also involved team members periodically leaving the project because of summer break and graduation. Consequently, these team members potentially did not benefit from the full ICSP experience in being able to fully apply EBP and may have had different perceptions of the program in that they finished their participation before the projects were implemented. Forsyth, Melton, and Mann (2005) reported that EBP programs should address the inevitable entry and departure of practitioners; otherwise, practice change would be limited over time. Although evidence supports that team members were more knowledgeable after participation in the ICSP, the total score for the Evidence-Based Practice Belief Scale (Melynky et al., 2004) did not demonstrate a significant change. Overall, the evidence supported the predicted pattern, in which the ICSP resulted in positive changes in beliefs in EBP and attitudes toward interprofessional teams.

Implications for Occupational Therapy Education

On the basis of this case study’s findings, several recommendations for improving the ICSP were identified that would assist occupational therapists in designing similar programs:

- Having clearer attendance expectations to create more cohesive teams
- Asking team members to sign up for longer periods of involvement
- Adding extra learning modules to address EBP steps that are more difficult
- Correlating the scheduled learning times to better match teams’ readiness
• Training mentors in mentoring interprofessional teams before beginning the program.

Summary
As a result of ICSP participation, clinical staff, faculty, and students learned the complete EBP process from question formation through practice implementation. The program was an effective vehicle for students to experience the way in which practitioners solve clinical problems and negotiate complex systems to change practice. Because practice change did occur, an interdisciplinary EBP process facilitated the work’s occurring within a prescribed time frame. As the ICSP continues to evolve, future program evaluation will need to examine the mechanisms of shared decision making facilitated through mentoring. A need also exists to evaluate whether interprofessional EBP promotes quality and reduces costs.

Acknowledgments
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The success of the ICSP is due to dedicated staff and advanced practice nurses from North Memorial Medical Center and faculty and students from St. Catherine University. The Minnesota Nurses Association Foundation awarded a $10,000 grant for Mentoring Mentors in an Interprofessional Clinical Scholar Project in partial support of the program evaluation.

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