

Reality Check: Are We Truly Preparing Our Students for Interprofessional Collaborative Practice?

Jenn Salfi, Jennifer Mohaupt,
Christine Patterson, Dianne Allen

Many academic settings offer interprofessional education (IPE) experiences that are of short duration and situated in safe, controlled environments such as classrooms or simulation labs. The purpose of this study was to examine the effects of a 10-week IPE strategy that was incorporated into the final clinical practicum of a BScN program. A mixed methods design was chosen, in the belief that qualitative data would help explain quantitative data from pre-test/post-test design ($n = 268$). Quantitative results revealed that participants disagreed more with statements on interprofessional collaboration (IPC) after completion of the strategy ($p = 0.00$). Qualitative findings reinforced these results, revealing a theme of *common sense is not so common* when it comes to IPC in the health-care setting. When student nurses are being prepared for IPC, IPE strategies should be as “real” as possible, with exposure to some of the realities of interprofessional team functioning.

Keywords: interprofessional education, nursing education, collaborative practice

Résumé

**Leçon de réalisme :
nos méthodes préparent-elles vraiment nos
étudiantes à la collaboration interprofessionnelle?**

**Jenn Salfi, Jennifer Mohaupt,
Christine Patterson, Dianne Allen**

De nombreux milieux universitaires proposent des expériences de formation interprofessionnelle (EPC) de courte durée qui se déroulent dans un cadre sûr et contrôlé comme une salle de classe ou un laboratoire de simulation. Notre étude avait pour but d'analyser les effets d'une stratégie de 10 semaines intégrée au stage clinique final d'un programme de baccalauréat en sciences infirmières. Nous avons eu recours à des méthodes mixtes, estimant que les données qualitatives nous aideraient à expliquer les données quantitatives recueillies pendant l'étude prétest/post-test ($n = 268$). Les résultats quantitatifs révèlent un désaccord plus grand des participantes avec les énoncés sur la formation interprofessionnelle une fois la stratégie terminée ($p = 0.00$). Les résultats qualitatifs appuient ce constat, ce qui laisse entrevoir que *le sens commun n'est pas aussi commun qu'on le croit* quand on parle d'EPC dans un milieu de soins. Il importe donc de faire en sorte que les stratégies s'adressant aux élèves-infirmières en matière d'EPC collent le plus possible avec la « réalité » et les exposent notamment à certains aspects du fonctionnement des équipes interprofessionnelles.

Mots clés : formation interprofessionnelle, formation infirmière, pratique collaborative

As the delivery of health care becomes more complex and challenging, all professionals need to collaborate as members of a team. Interprofessional education (IPE) is an essential step in preparing a “collaborative practice-ready” workforce that is able to respond to and meet the health-care needs of the population (World Health Organization, 2010). IPE occurs when students in two or more professions learn with, from, and about one another, with the ultimate goal of cultivating trust and respect between professional groups and dispelling prejudice and rivalry between professions to improve collaboration and the quality of care (Centre for the Advancement of Interprofessional Education, 2010).

Registered nurses are an integral part of the health-care team, so it is critical that their education prepare them for interprofessional collaboration (IPC). According to the Canadian Interprofessional Health Collaborative (CIHC) (2010), IPC occurs when “learners/practitioners, patients/clients/families and communities develop and maintain interprofessional working relationships that enable optimal health outcomes” (p. 6). Several key documents have been drawn up to assist educators with the development, implementation, and evaluation of IPE in the field of health. These include two national resources, the *Interprofessional Health Education Accreditation Standards Guide* (Accreditation of Interprofessional Health Education [AIPHE], 2011) and the *National Interprofessional Competency Framework* (CIHC, 2010). More specific to the profession of nursing, in the province of Ontario a number of interprofessional competencies are expected of RNs, upon entry and ongoing registration with the regulatory body of nursing (College of Nurses of Ontario [CNO], 2014). All of these documents outline essential interprofessional competencies, such as role clarity, team functioning, client-centred care, collaborative leadership, conflict management, and interprofessional communication.

Hudson, Sanders, and Pepper (2013) conducted an integrative review to examine how IPE is being integrated into baccalaureate nursing programs. Three databases (CINAHL, MEDLINE, and Cochrane Library) were thoroughly searched by a medical librarian at three time points over the course of 7 years. Studies were retrieved if they met specific inclusion criteria and were included in the study if consensus was reached by all of the authors. The findings from the review of 13 studies revealed that the most frequent strategies were simulation sessions or seminars, typically of “shorter duration,” defined as 5 hours or less. IPE is generally structured this way to overcome the common challenges and obstacles associated with implementing IPE initiatives, such as limited financial and personnel support, difficulty arranging and sustaining IPE initiatives due to incompatible clinical shifts and timetables, and rigid curriculum schedules (Morison, Boohan, Jenkins, & Moutray, 2003). Hudson and colleagues

(2013) found that IPE in community and clinical practice settings was seldom used as a strategy for IPE, and therefore the competency of inter-professional communication was the least evaluated in these forms of IPE — which is a critical component of collaboration. The ability to communicate in a respectful manner is critical in collaborative efforts, as it facilitates connectedness between team members and fosters shared decision-making, responsibility, and authority (Sele, Salamon, Boarman, & Sauer, 2008). We need to capitalize on the opportunities for IPE within community or clinical practice settings, as there are frequent occasions for interprofessional communication and team functioning in these environments.

Another key component of effective IPE is that it is viewed not in isolation but as a continuum over a pre-licensure curriculum (Thibault, 2011). Hammick, Freeth, Koppel, Reeves, and Barr (2007) conducted a review and concluded that the majority of IPE initiatives were isolated events primarily undertaken on a voluntary versus mandatory basis. IPE experiences outside of the core curricular objectives may contribute to the perception that IPE competencies are less valuable than profession-specific skills (Brashers, Owen, Blackhall, Erikson, & Peterson, 2012). The literature stresses the need for intentional integration of IPE across a curriculum. Embedding IPE in the content and learning processes of a pre-licensure curriculum gives students a variety of opportunities to accumulate essential knowledge and skills, as well as some of the attitudes, behaviours, and confidence necessary to become effective members of a health-care team (Hudson et al., 2013; Salfi, Solomon, Allen, Mohaupt, & Patterson, 2012; Sullivan & Godfrey, 2012).

As a strategy for preparing nearly 2,000 undergraduate nursing students (dispersed across three different academic sites) for IPC, a framework was developed to guide the intentional integration of a variety of foundational and relational IPE activities and experiences throughout a nursing curriculum (Salfi et al., 2012). Based on the work of Vygotsky (1978), which found that cognitive processes associated with collaboration and communication can be effectively developed in clinical settings to promote higher-level learning among students, the framework suggests the placement of a variety of interprofessional clinical experiences, scaffolded appropriately to each developmental level of the program. The framework is substantiated by Miller's (1990) four levels of competence (knows, knows how, shows how, does), in that levels of competence are much like steps — each level is the building block for the next. The idea behind weaving “threads” throughout a curriculum is that every student will accumulate essential knowledge and skills, as well as some of the attitudes, behaviours, and confidence necessary to become an effective member of a health-care team.

Overall, there are a limited number of studies reporting on IPE initiatives in pre-licensure baccalaureate nursing education. Of the 13 studies reviewed by Hudson and colleagues (2013), the majority had small sample sizes and used self-reported data, which raises concerns about participant bias and memory. Hudson and colleagues stress the need for more research in the area of IPE strategies in nursing education, with larger sample sizes and use of valid and reliable measures to assess the effectiveness of the strategies. This article will address the above needs and will present the findings of a mixed methods study evaluating the effectiveness of one IPE strategy that was embedded into the final clinical practicum of a BScN program.

IPE Strategy

One of the IPE strategies incorporated into the final year of the BScN curriculum was a three-part assignment: some preliminary readings to provide context, a 10-week term as a contributing member of a health-care team within the clinical practicum, and a written analysis of the student's experiences as a team member. In the written component, students were required to assess and describe their contributions to the health/social care team throughout the term and formulate a plan for ongoing professional development as an effective member of a team; they were instructed to make reference to a variety of documents (i.e., AIPHE, 2011; CIHC, 2010; CNO, 2014) in the plan, to reinforce the importance of the assignment to their development as a health professional. The IPE strategy (assignment) was integrated into the final year of the BScN program, as most students are immersed in the clinical setting at this time and it was expected that they would be participating and contributing to the overall effectiveness of their health-care team. This strategy was preceded by other IPE activities and experiences in the first few years of the program, aimed at increasing students' knowledge about other providers' roles and the elements and importance of effective IPC practice. The overall goal of the framework and this final IPE strategy was development of the "healthy" attitudes and behaviours required for effective collaborative practice, due to active and consistent participation in a health-care team.

Methods

Design

A sequential explanatory mixed methods design was used to assess what students had learned about IPC and their role within the team while completing the assignment. This design was chosen in the belief that the

qualitative data collected would help to explain and interpret the findings from the primary (quantitative) data. By collecting both quantitative and qualitative data, one can develop a more complete picture of the phenomenon under study (Creswell, 2008).

Recruitment and Sample

Students were recruited from all three sites (one university and two colleges) of the BScN consortium. Ethics approval was obtained from the university ethics committee and the ethics boards of both colleges. For the quantitative component of the study, students in the final term of their fourth year received an e-mail invitation during week 1 of the term, delivered via the BScN program's communication portal. This was followed by an oral in-class invitation delivered by student research assistants assigned to each of the 33 classes. Student research assistants were used instead of faculty researchers to minimize any sense of bias related to coercion or fear of punishment. The student research assistants also reviewed information about the study and presented an overview of the pre/post-assignment design. They were responsible for administering the questionnaires and collecting and returning the completed questionnaires to the research team. Consent to participate in the study was implied if students agreed to complete the pre-assignment questionnaire.

The post-assignment questionnaire was administered in the same fashion as the pre-assignment questionnaire, 10 weeks later, after completion of the IPE assignment. The response rate was 97% (314/329) for the pre-assignment questionnaire and 89% (292/329) for the post-assignment questionnaire. As the purpose of the questionnaire was to assess for changes in attitudes and perceptions about IPC practice before and after the 10-week IPE strategy, only pre-assignment/post-assignment matches were considered in the analysis. The quantitative data analyzed in the study involved 268 pre/post-assignment matches, with fair distribution across the three sites.

For the qualitative component of the study, convenience and criterion sampling strategies were used to recruit students from all three sites, as the researchers wished to determine if geographical location had an impact on the overall learning experience. A convenience strategy of first come, first served was used to recruit students who were willing to participate and who were available at one of the three locations at the specified times. A criterion strategy was employed to assemble focus groups that included at least one student from each stream of the BScN program to determine if there were any differences in the experiences of students from different streams. "Streams" are the different curriculum pathways to the BScN program. The *basic* stream is the pathway for students straight from high school; the *accelerated* stream is generally reserved

for students who already hold a science degree and/or who wish to complete the program in a contracted amount of time; the *post-diploma* stream is for students who have earned their RN diploma through a college program and have returned to school for a BScN; and the *RPN to BScN* stream is the pathway for students who are currently registered practical nurses (RPNs) and wish to obtain their BScN. The four streams differ in course requirements and time to completion.

Three focus groups were assembled, with five students in two of the groups and four in the third ($N = 14$). Students were recruited through an e-mail invitation from the principal investigator specifically seeking representation from each stream of the program and from each site. Messages for recruitment were repeatedly sent out until the criteria for representation for each focus group were met.

Data Collection

Quantitative measures. Four demographic questions and a questionnaire were administered before and after completion of the assignment (i.e., at weeks 2 and 12). Since the questionnaire was administered at the beginning and end of the students' clinical practicum, their responses were based on a 10-week clinical experience. The questionnaire was administered in the students' theory class by the assigned student research assistant. The demographic questions collected information on age, gender, BScN stream, and site (as these variables were thought to affect students' perceptions of and attitudes towards IPC).

The questionnaire chosen for the study was the modified Interdisciplinary Education Perception Scale (IEPS) (McFayden, MacLaren, & Webster, 2007), which has been commonly used to monitor changes in the attitudes and perceptions of undergraduate students in health and social care, including nursing students. The revised version of the IEPS consists of 12 items and three subscales: Competency and Autonomy, Perceived Need for Cooperation, and Perception of Actual Cooperation (Appendix 2) (McFadyen et al., 2007) — all of which are attitudes that are considered important in interdisciplinary settings. The Competency and Autonomy and Perception of Actual Cooperation subscales each contain five items. The Perceived Need for Cooperation subscale contains two items. A six-point agreement scale is used to maximize response variance (1 = strongly agree; 6 = strongly disagree), without the option of a median (neutral) response. The dichotomization of agreement/disagreement responses forces variance onto the scale (Luecht, Madsen, Taugher, & Petterson, 1990).

Reliability and validity of this tool have been established by a number of researchers, with alpha values in excess of 0.80 on two of its subscales. All three subscales either achieve or approach the 0.60 level for total test-

retest reliability. It has been recommended that researchers consider choosing the revised IEPS instead of the original version (McFadyen et al., 2007).

Qualitative measure. The key purpose of the qualitative component, which was comparable to a small descriptive study, was to gather information on the students' learning experiences with the IPE assignment. Qualitative descriptive research is ideal when descriptions of a phenomenon or experience are desired (Sandelowski, 2000).

Focus group sessions at each site ran for approximately 45 to 60 minutes and were audiorecorded. These were semi-structured, guided by four central questions aimed at understanding the students' experience with the assignment, as well as their perceptions of the value of that particular interprofessional experience (Appendix 1). Two investigators attended each focus group, one observing and recording notes, the other facilitating the interview process. The principal investigator was not involved in the focus group sessions due to conflict of interest. Although the research team was initially aiming for six to eight participants in each group, a decision to terminate recruitment was made once analysis revealed that data saturation had been reached and there was no need for additional participants.

Data Analysis

Quantitative. As is typical with a sequential explanatory design, quantitative and qualitative data were collected and analyzed separately, as the two data sets reflected different questions (Creswell, 2008). Pre-assignment and post-assignment IEPS scores were matched (by student) and subscale scores were compared using a paired samples test. Subscale data were also compared by BScN stream (basic, accelerated, post-diploma, RPN to BScN) via paired samples test. One-way ANOVA was used to test for differences among subscale mean baseline scores, as well as for site comparisons.

Qualitative. The recordings were transcribed and members of the research team were responsible for checking and cleaning their data for accuracy. Thematic analysis began with reviewing and coding of the transcripts independently by four members of the research team, with each investigator assigning codes — words or phrases representing sections of the qualitative data. Preliminary themes were then generated and it became apparent that saturation had been achieved with the qualitative data collected from the focus groups. To gain consensus or intercoder agreement (Creswell, 2009), members of the research team met to cross-check codes and collapse and refine the total number of themes, thus enhancing the dependability of the qualitative findings. Credibility of the data collected was established through data triangulation strategies

(participants from different sites and streams, digital recordings, notes); method (quantitative and qualitative methods); and investigator (multiple investigators involved in both collection and analysis of data).

Findings

Quantitative

The demographic questions revealed that the sample was 92% female ($n = 247$), with an average age of 22 years. Most participants (77%; $n = 206$) lacked prior clinical experience, as they had entered the program directly from high school. The numbers of participants from two of the sites were closely balanced ($n = 102$; $n = 104$), with a smaller sample recruited from the third site ($n = 62$), which was proportionate with the number of eligible participants at that site. The three sites followed the same BScN curriculum for all 4 years of the program; thus the students had had similar clinical experiences and IPE exposure at the time of the study.

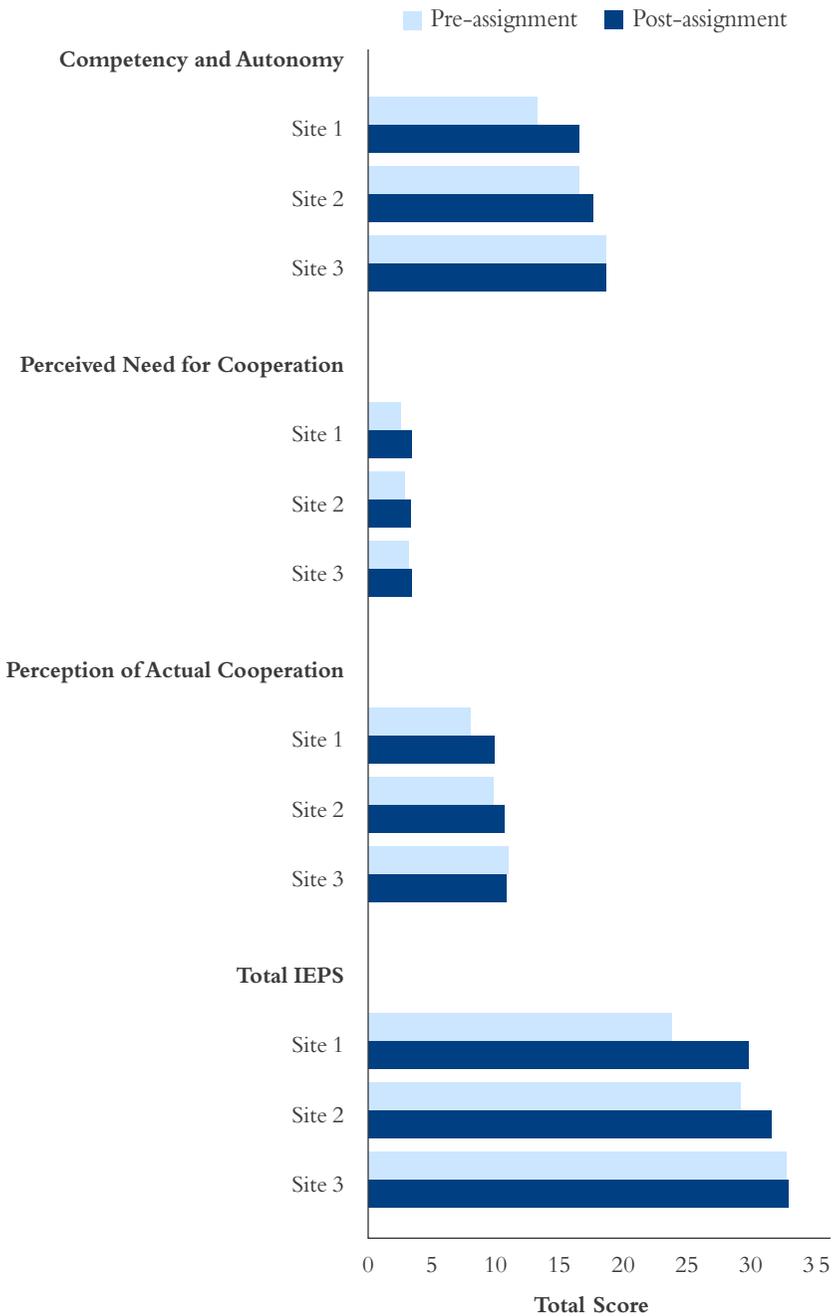
When all pre-assignment and post-assignment matched IEPS subscale scores ($n = 268$) were compared via paired samples test, significant differences ($p = 0.00$) were found for each of the subscales and the total IEPS score. All subscale mean scores increased post-assignment, indicating that participants *disagreed more* with the IEPS statements after completing their assignment (Figure 1). When data were split by gender, female students showed the same pattern (females accounted for 92% of all participants), indicating significant increases in all mean subscale scores ($p = 0.00$). Male students showed no significant difference pre- and post-assignment; however, due to the small number of males in the sample (< 25) differences may not have been visible in the data collected.

When subscale data were compared by BScN stream, significant increases in all mean subscale scores were seen in the *basic* stream ($p = 0.00$), with no other stream showing significant changes. However, the small number of participants in the other three streams may be why no significant change was detected.

When subscale data were examined using one-way ANOVA to test for differences among subscale mean baseline scores, the findings revealed a significant difference for Competency and Autonomy only, which includes items such as “individuals in my profession are very positive about their contributions and accomplishments” and “individuals in my profession trust each other’s professional judgement” (McFadyen et al., 2007, p. 434). Significant differences were not seen for the other two subscales.

When site comparisons were made for the IEPS subscale scores and total IEPS score, site 1 showed significant increases in all subscale scores and total score ($p = 0.00$), site 2 showed a significant increase only in the

Figure 1 *Scores for the Three Subscales, by Site*



mean score for Perceived Need for Cooperation ($p = 0.05$), and site 3 showed no significant change in any of the mean subscale or total scores.

The mean baseline scores for the Competency and Autonomy subscale yielded one unexpected finding. There was a 5.4 difference between sites 1 and 3, a 3.3-point difference between sites 1 and 2, and a 2.1-point difference between sites 2 and 3. This difference in baseline perceptions and attitudes across the three sites *prior* to the assignment was not anticipated, as all students experienced the exact same BScN curriculum and the exact same IPE opportunities. After completion of the 10-week assignment, the differences in student perceptions and attitudes across the three sites decreased, with all mean scores for Competency and Autonomy falling within a two-point range.

Qualitative Findings

Qualitative findings revealed a number of recurring themes, which were collapsed into three broad categories: *common sense is not so common*, *wish list*, and *preparation for collaborative practice*.

Common sense is not so common. The strongest and most prevalent theme to surface was *common sense is not so common*. Students alluded to what they called “common sense” in terms of health-care-team functioning and the nurse’s role within the team. However, during their 10-week assignment they learned that behaviours required for effective collaboration were not as common as they had thought. Having learned the importance and value of IPC in their curriculum, students expected to observe and experience more effective and positive interactions with members of their health-care team. One participant cited a key benefit of this particular IPE strategy:

This assignment made me aware that it [IPC] doesn’t always work out . . . and prepared me for that possibility. (site 1)

Through the interprofessional opportunities experienced in their clinical practicum, students were exposed to some of the realities of IPC, including the multiple behaviours that hinder effective collaboration, as well as other essential elements in effective team functioning and optimal client-centred care (i.e., leadership/culture of the clinical setting):

It [IPC] is more than just different professions coming together. (site 3)

Another strong theme was increased awareness of the RN role in the health-care team, in particular the RN–physician relationship. Interestingly enough, in most if not all of their observations the participants described nurses as lacking some of the key IPC competencies. Although these competencies are mandated for professional practice (CIHC, 2010; CNO, 2014), essential interprofessional skills and behav-

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hours were “not so common” among the nurses in their practice settings:

Nurses like to lie low and avoid conflict. (site 1)

Nurses do not have the tools to address conflict . . . [They] are scared to challenge others on the team. (site 3)

Nurses are not assertive enough with others [with other professionals]. (site 3)

Wish list. Consistent with most of the literature on IPE, students valued their experiences working with others and craved more opportunities to learn within a team environment. One participant cited the need for IPE opportunities to be “real” in order for a student nurse to develop the confidence needed to be an effective member of a health-care team:

One or two IPE experiences in my entire undergrad is not enough. I'm glad this experience forced me to be more involved [as a team member]. I learned so, so much this term, but [I] still feel a little uncomfortable working in a health-care team. (site 2)

Some participants even began to envisage ideal IPE opportunities within their curriculum:

It would be helpful to have students from other disciplines in our PBL [problem-based learning] groups, but not until after second year. That way nurses [student nurses] would have a good understanding of their own role before learning about the roles of others. (site 3)

Preparation for collaborative practice. The third theme was the value of the IPE assignment/experience in preparing students for future IPC. Participants frequently referred to the six key domains of the *National Interprofessional Competency Framework* (CIHC, 2010) and began labelling behaviours that they observed and/or experienced within their team:

I wouldn't have even realized that was an issue during my interprofessional experience if it wasn't for the previous readings, which were mandatory. So that was really helpful. (site 1)

Now I always think about it [IPC] while I'm at my [clinical] placement. (site 2)

Finally, the overall mindset seemed to shift from “me” to “we,” in that a number of participants made reference to belonging to a team:

Knowing what I know now motivates me to collaborate more with others.
(site 1)

Now I don't feel alone . . . we're all in this together. (site 2)

Quantitative and Qualitative Findings

Consistent with an explanatory sequential design, the findings from the qualitative phase were examined alongside the quantitative results, to enhance our understanding and to help “explain” the quantitative results (Creswell & Plano Clark, 2011). It was expected that the results of the study would be typical of those for IPE initiatives that have been evaluated and published, which include *more agreement* with statements about IPC post-IPE strategy. Yet our results show *more disagreement* post-IPE strategy using the revised IEPS (McFadyen et al., 2007), which is one of the more common measurement tools for assessing changes in the attitudes and perceptions of undergraduate students. In seeking to understand why the results indicated more disagreement, the research team looked to the sample size to determine whether it was sufficient to detect such a difference. The sample of 268 pre/post-assignment matches (out of a possible 329) from across the three sites of the BScN program yielded 81% power, and therefore was sufficiently large to reveal a meaningful difference (Davies & Logan, 2012). Also, the results were representative of all the students in the program who were exposed to the 10-week IPE strategy, as recruitment was proportionate across the three sites. It was hard to contest the fact that there was more disagreement post-IPE assignment, so the next step was to determine why.

For 10 weeks, students observed and experienced interprofessional situations within their clinical practicum that influenced their perceptions of both nursing professional practice and interprofessional practice. Their experiences were the basis for the findings of this study. Some key findings surfacing from the qualitative data did indeed elaborate the quantitative findings. The most prevalent finding — a theme commented on by most of the participants — was behaviours of nurses that hindered effective collaboration, be it interprofessional or intraprofessional. The most commonly cited themes were inability to manage conflict (conflict avoidance) and ineffective communication, both of which are key areas of competency for successful professional practice (CNO, 2014) and effective interprofessional practice (CIHC, 2010). The literature also reveals avoidance to be the most common strategy for conflict resolution resorted to by nurses (Baker, 1995), in part due to contextual factors associated with their daily work, such as workload and lack of time, and possibly related to perceptions about hierarchical relationships within the team (Zwarenstein & Reeves, 2002). Avoidance does not generally

address the conflict and is a non-assertive, uncooperative technique that can lead to behaviours that are detrimental to team functioning and, more importantly, to client-centred care.

Discussion

The many benefits of IPC would lead many to expect that it is common-sense practice, but the findings of this study suggest otherwise — that common sense is not common practice in terms of functioning within health-care teams. Given that IPE has been proposed as one of the vehicles for preparing pre-licensure students for IPC, it is critical that education be closely aligned with the realities of the clinical environment.

There are a number of documents outlining the competencies expected of RNs in Canada. One can assume that by the 4th year of a baccalaureate program most students are well versed in the *Competencies for Entry-Level Registered Nurse Practice* (CNO, 2014) as they prepare for graduation. One might also assume, then, that student nurses hold some level of expectation that their nurse clinician colleagues will exhibit many of the required skills and behaviours outlined in the CNO (2014) document — for example, “displays initiative, confidence and self-awareness, and encourages collaborative interactions within the nursing and health care team” (p. 5); “demonstrates effective collaborative problem-solving strategies, including conflict resolution” (p. 5); and “demonstrates professional leadership by building relationships and trust with clients and members of the health care team” (p. 6). Student nurses have a unique perspective in the clinical setting in that they are newly informed and are focused on what ought to be in terms of patient care and team functioning (according to the learned competencies), and are less invested than others in the specific culture of the clinical site. The level of disagreement with items pertaining to the competency and autonomy of one’s profession suggests a discrepancy between what student nurses are learning in their professional curriculum and what they are observing and experiencing in their clinical practicum. This is not a new concept in the nursing literature: four decades ago Kramer (1974) coined the phrase “reality shock” to describe the conflict between what student nurses learn in school and what exists in professional practice.

Another factor that may have influenced the rise in *disagreement* with statements summarizing perceptions of IPC is the nature of this particular IPE strategy (as compared with the vast majority of IPE evaluation research, which reveals more *agreement* with statements about IPC). IPE generally takes the form of brief interprofessional encounters in simulated lab, classroom, or workshop settings, seldom in real community and

clinical practice settings (Hudson et al., 2013). Such IPE experiences are generally considered “safe,” with one or more faculty supervisors facilitating team communication and functioning and managing any team conflict that might arise. Feedback is usually formative in nature, with no detrimental consequences of ineffective collaboration — an interprofessional learning environment that is very different from a “real” clinical environment. This study reveals some of the effects and experiences associated with an IPE strategy that is situated in students’ clinical environment. Students’ perceptions about interprofessional (interdisciplinary) collaboration might change significantly in the transition from a “safe” interprofessional environment to a “real” one.

Another possible factor is the duration of the event. Is participation in brief, isolated IPE events sufficient to prepare students for effective collaborative practice? Attitudes and behaviours develop over time and with experience, as do autonomy, competence, and confidence, which are supported by a continuous mandatory IPE curriculum spanning the duration of a pre-licensure program (versus a number of isolated IPE events) (Salfi et al., 2012; Thibault, 2011). By the final term of a nursing program, most students are immersed in the clinical setting, with opportunities to work within a health-care team and/or with other health and social care learners and professionals. This is a perfect time to mandate participation in interprofessional activities, such as family/team meetings, rounds, or committees. Although specifically developed interprofessional clinical placements and internships with students from other professional programs would be the ideal IPE opportunity for a BScN student, this is seldom an option due to lack of resources and clinical placements. One area that all educators can capitalize on and that all nursing students have in common is the clinical setting; therefore, maximizing opportunities for IPE within clinical placements is the best alternative for preparing students for collaborative practice.

It is not our intention to downplay the importance of short-duration IPE strategies in safe environments — inarguably, brief encounters with other pre-licensure students are critical, as they provide student nurses an opportunity to acquire knowledge about the professional roles of others and when and how best to collaborate with other professional groups. These exposure-level IPE initiatives also provide an opportunity for students to articulate their own professional role to others, which is as important as learning about the roles of others. However, the findings of this study show that students need to experience a variety of IPE strategies, of both short and long duration, in both safe settings and real health-care environments, if they are to become effective members of a health-care team after graduation.

Hudson and colleagues (2013) conclude that there are a limited number of studies reporting on IPE initiatives in pre-licensure baccalaureate nursing education. They also characterize the few current studies as having small sample sizes and using self-reported data only, which are causes for concern regarding participant bias and memory. They stress the need for more research in the area of IPE strategies in nursing education, with larger sample sizes and use of valid and reliable measures to assess the effectiveness of the strategies. The findings from the present study contribute to the body of research evaluating IPE strategies in baccalaureate nursing education, as they are based on a sufficient sample size and the use of multiple methods to strengthen the data. The findings are also unique in that they report on a longer-duration IPE initiative situated in a “real” clinical environment. This IPE strategy not only showed student nurses that IPC “doesn’t always work out,” but also helped foster a collaboration-ready mindset: “We’re all in this together.”

Limitations

The study focused on only one IPE strategy, from one multisite baccalaureate curriculum in southern Ontario. Therefore, the findings may not be generalizable to other nursing or pre-licensure programs. In addition, the findings may have been influenced by the assignment criteria. The research was to be conducted using data from a number of IPE strategies incorporated into the curriculum, but due to unforeseen circumstances this was not possible. It would have been helpful to compare the findings from the evaluation of this IPE strategy with those of other strategies, to validate the differences between short- and long-duration initiatives and between “real” versus “safe” IPE strategies.

Implications for Practice and Research

This study yielded findings that were unexpected yet important to acknowledge when renewing, revising, or designing a new curriculum for student nurses. One suggestion for nursing education and clinical practicums is to include a variety of IPE strategies throughout the curriculum of a program. Strategies that are of both short and long duration, in both safe settings and actual health-care environments, are critical in preparing student nurses to be effective team members.

The differences in student perceptions of IPC pre-IPE strategy was an unexpected finding that warrants further exploration. The three program sites offered the exact same curriculum with similar opportunities for IPE, so it is unclear what influenced such a discrepancy between the perceptions/baseline IEPS scores across the sites. Is it related to the nature of the collaborative environment at each site? Post-IPE strategy this divergence in attitudes and perceptions about interprofessional col-

laboration across the three sites diminished to a point where the difference was no longer statistically significant. This finding reinforces the need to integrate a variety of IPE strategies throughout a baccalaureate curriculum, especially when the program is spread across multiple sites.

Future research might evaluate similar “real” IPE strategies with nursing cohorts from other educational programs, to see if perceptions are similar across geographical and educational locations. Still to be investigated are the factors that resulted in the variance in students’ perceptions and attitudes across the three sites of the BScN consortium (prior to the IPE assignment), given that they shared the exact same curriculum and IPE opportunities for more than 3 years.

It would also be interesting to investigate the perceptions and experiences of other pre-licensure professional groups (such as students in medicine, midwifery, or the rehabilitation sciences) after similar IPE strategies have been implemented in their programs, to determine whether our findings are unique to nursing or are generalizable to other health professions.

Conclusion

There is global consensus that IPE is an essential step in preparing a collaborative practice-ready workforce that will meet the health and social care needs of the population. What remains uncertain is how IPE should be structured and integrated in pre-licensure professional programs to maximize its potential and best prepare student nurses for an extremely complex and ever-changing health-care environment. Although more research is needed in this area, the present results suggest that a variety of IPE strategies should be deployed throughout the entire nursing curriculum so that all students have sufficient opportunities to acquire the knowledge, skills, attitudes, and confidence necessary to become effective members of a health-care team, while at the same time preparing them for the realities of the clinical workplace.

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Jenn Salfi, RN, PhD, is Assistant Professor, Department of Nursing, Brock University, St. Catharines, Ontario, Canada. Jennifer Mohaupt, RN, MEd, is Professor, Conestoga College Institute of Technology and Advanced Learning, Kitchener, Ontario. Christine Patterson, RN, MScN, is Diabetes Nurse Educator, De dwa da dehs nye>s Aboriginal Health Centre, Hamilton, Ontario. Dianne Allen, RN, MSc, is Professor, Conestoga College Institute of Technology and Advanced Learning.

Appendix 1 Interview Guide

1. Describe your experiences with each component of the interprofessional (IP) Assignment. What did you learn from each component?
 - a) Required Readings
 - b) Mandatory Interprofessional (IP) Collaborative Experiences/Activities in Clinical Setting
 - c) Completion of the Written Component
2. What was your overall experience with this assignment?
3. Would you recommend keeping the IP Assignment in the B.Sc.N curriculum? Eliminate it? Or re-write the assignment? Please justify your response.
4. In your honest opinion, do you think the IP Assignment was helpful in preparing you for interprofessional collaborative practice? Explain your response.

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Appendix 2 Interdisciplinary Education Perceptions Scale (IEPS)						
The following statements are about your perceptions of interprofessional education. Please show how far you <i>agree</i> or <i>disagree</i> with each statement by circling one number against each item.						
Statement	Strongly Agree	Agree	Agree > Disagree	Disagree > Agree	Disagree	Strongly Disagree
1 Individuals in my profession are well trained	1	2	3	4	5	6
2 Individuals in my profession are able to work closely with individuals in other professions	1	2	3	4	5	6
3 Individuals in my profession are very positive about their goals and objectives	1	2	3	4	5	6
4 Individuals in my profession need to co-operate with other professions	1	2	3	4	5	6
5 Individuals in my profession are very positive about their contributions and accomplishments	1	2	3	4	5	6
6 Individuals in my profession depend on the work of people in other professions	1	2	3	4	5	6
<i>Continued on next page</i>						

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Statement	Strongly Agree	Agree	Agree > Disagree	Disagree > Agree	Disagree	Strongly Disagree
7 Individuals in my profession trust each other's professional judgment	1	2	3	4	5	6
8 Individuals in my profession are extremely competent	1	2	3	4	5	6
9 Individuals in my profession are willing to share information and resources with other professionals	1	2	3	4	5	6
10 Individuals in my profession have good relations with people in other professions	1	2	3	4	5	6
11 Individuals in my profession think highly of other related professions	1	2	3	4	5	6
12 Individuals in my profession work well with each other	1	2	3	4	5	6
<i>Source: McFadyen et al. (2007).</i>						