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Facilitating and evaluating a student-led seminar series on global health issues as an opportunity for interprofessional learning for health science students

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Abstract

Pre-licensure interprofessional education (IPE) is often cited as an important foundation in promoting collaboration between healthcare professionals. Due to administrative and attitudinal challenges that can arise in delivering IPE, pre-licensure healthcare students are rarely given the opportunity to learn together. As a result of the lack of opportunity in the formal curricula, an interprofessional student group developed and coordinated a 10-week, extracurricular seminar series on global health for medicine, nursing and occupational and physical therapy students at a Canadian university in 2006. This seminar series featured multi-disciplinary experts in global health and integrated interprofessional problem-based learning. Using qualitative methods, including focus groups, student reflections and pre- and post-course surveys, specific areas were evaluated as follows: participants' attitudes towards IPE; the appropriateness of using global health as a vehicle for IPE; and the perceived obstacles and benefits of the IPE experience provided by this seminar series. The evaluation findings highlight the unique benefits and drawbacks of using global health as a vehicle for IPE, the value of sharing a common interest between professions in delivering IPE, perceived practice implications resulting from this seminar series and recommendations in delivering such an initiative. Also, while providing many of the same benefits in the promotion of collaboration between professions as recognized in formal IPE, this student-run, extracurricular model was shown to limit administrative obstacles, facilitate self-directed learning and integrate a diverse population of students. Overall, the model and content described was shown to serve as a beneficial and unique means of delivering IPE.

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Introduction

As collaborative healthcare teams are recognized as a key element in delivering more effective, client-centred care (Oandasan & Reeves 2005a), there is growing interest in interprofessional education (IPE) among healthcare providers and educators. IPE can be defined as 'when two or more professions learn with, from and about one another' (CAIPE 2002). It is often suggested that IPE can build respect and trust between professions, reduce negative stereotypes, promote collaboration and understanding and ultimately increase quality of care (Cooper *et al.* 2001; Morison *et al.* 2003; Freeth 2005; Duncan *et al.* 2006). Along this same logic, it is inferred that integrating IPE into curricula for pre-licensure healthcare students will encourage understanding of differences and demonstrate how professions might work together to the patients' benefit (McPherson, Headrick, & Moss 2001) and foster a culture of interprofessional (IP) collaboration early in their careers (Romanow 2002).

However, no conclusive evidence concerning the outcome of pre-licensure IPE on healthcare practice currently exists (Morison *et al.* 2003; Zwarenstein *et al.* 2005). Debate surrounding an optimum time to introduce IPE, pedagogical strategies and appropriate subject matter still remains unresolved (Barr 2000; Hall & Weaver 2001; Horsburgh, Lamdin & Williamson 2001; McPherson *et al.* 2001). To add to this, other challenges cited in implementing IPE for students include numerous administrative and logistical obstacles including 'inhibitors' such as inequalities in the number of students, geographical isolation from one another, differences in curricula, timetable conflicts, securing joint validation and accreditation, and agreeing on joint financial arrangements (Pirrie *et al.* 1998; Rees & Johnson 2007). Despite this, many universities are actively integrating IPE initiatives into their curricula (Canadian Interprofessional Health Collaborative 2007).

Although there seems to be a trend in IPE research in using students' perspectives in designing IPE initiatives, there is currently no evidence that students have been involved in the designing or implementation of such courses (Hoffman *et al.* 2008). Our literature search revealed only one published work of the results of an IPE initiative run by students (Boyer, Lee, & Kirchner 1977). Student-run initiatives should not be considered supplementary to the educational curriculum; they can be a valuable resource to help govern sustainable and rich IPE (Hoffman *et al.* 2008).

In the fall semester of 2006, an extracurricular educational initiative for medical, nursing, occupational therapy and physical therapy students on global health, entitled *Health in the Global Context*, took place at a Canadian university. This IPE initiative was unique as it used global health as a vehicle for IPE and particularly as it was run *for students, by students*. The effectiveness of using global health as a vehicle for IPE as well as the value of student-run initiatives for IPE was to be investigated. Described here are the experiences and lessons of student participants and coordinators involved in the seminar series *Health in the Global Contex*t.

Description of the course

The *Health in the Global Context* course was originally initiated in 2005 by two medical students due to the large interest in global health among healthcare students at the university and the lack of educational opportunities on global health in the formal curricula. In 2006, the three primary authors, all occupational therapy students, worked along with one nursing student to further develop this initiative and investigate the effectiveness of this student-run, extracurricular model as a vehicle for IPE. In designing this seminar series, the student coordinators aimed to provide information to health science students about global health issues as they relate to working both locally and abroad; provide a venue for IPE to foster a greater understanding of roles and resources of individuals within IP healthcare teams; and evaluate the effectiveness of this IPE initiative. In designing this course, student coordinators implemented IP teaching and learning strategies recommended in Oandasan & Reeves (2005a), specifically (i) group balance – integrating an equal mix of professionals in the class and groups; (ii) group stability – little turn over of group members between sessions; (iii) group size

Table 1 Weekly topics covered by discipline in *Health in the Global Context*

Discipline	*Topic*
N/A	Health in the global context – intro/discussion
Medicine	History of international health efforts
Rehabilitation sciences and medicine	Health research abroad – challenges in data and care
Occupational therapy	Community-based rehabilitation – remarkable women in times of upheaval in Sierra Leone, Zambia and Zimbabwe
Medicine, occupational therapy, nursing and physical therapy (student-run seminar)	Cuba: history of a social health system
N/A	Interprofessional case-based studies: globally significant health issues
Nursing	A health system approach to complex care – teams in international health
Medicine	Challenges of health delivery in under-resourced communities in Canada
Nursing	HIV/AIDS here and abroad
Occupational therapy	Mental health in post-Soviet Russia
N/A	Focus groups

– during discussion and case-based scenarios, class groups were limited to between 5 and 10 learners; and (iv) integration of IP problem-based learning.

Topics to be covered were chosen by the student coordinators and IP experts in global health who were invited to be guest speakers in the seminar series. These experts were recommended by word of mouth and verified by an informal literature search. In the end, eight guest speakers, representing the fields of medicine, nursing, occupational and physical therapy partook in the seminar series (Table 1). The seminar series also integrated one class dedicated to problem-based learning where students were divided into IP teams of six to eight students and asked to work on three case-scenarios developed by the coordinators and present their results to the class.

After ethical approval from the University Research Ethics Board was obtained and funding was secured from the University Faculty of Health Sciences, an e-mail advertising the seminar series was sent to all medical, nursing, occupational and physical therapy students enrolled at the university. Ninety-five students (63 medical, 21 nursing, 8 occupational therapy, 3 physical therapy) e-mailed one of the course coordinators asking to be considered for a place in the seminar series. Possible reasons for the variability in faculty representation include scheduling conflicts with upper-year occupational and physical therapy and medical students on clinical placements, medical students being the only group of students to receive official recognition from their faculty on their Dean's letter for participation, and the relative sizes of medical, nursing, occupational and physical therapy faculties. Twenty-eight students were selected via randomized stratification by discipline (12 medicine, 8 nursing, 5 occupational therapy and 3 physical therapy). This number was chosen based on IP teaching and learning strategies suggested by Oandasan & Reeves (2005a) and four extra places were opened up due to the overwhelming interest by medical students. Participants were informed this seminar series would not affect their academic standing and that participation was entirely voluntary. Participants ranged from first-year to upper-year students with varying levels of clinical experience and exposure to IPE as gathered by a pre-course questionnaire (Table 2). Students who attended at least 80% of the seminars were included in the evaluation process of this study. In total, 24 (10 medicine, 6 nursing and 5 occupational therapy and 3 physical therapy) of the original 28 students successfully completed the seminar series.

Additionally, due to the overwhelming response from students and faculty members, 4 of the 10 lectures were opened up to the university community

Table 2 Academic year, previous exposure to interprofessional education, and clinical experience (minimum one 4-week placement) of participants

Faculty	*Year of study*	*First exposure to IPE*	*Clinical experience*
Medicine	1st ($N = 5$)		
	2nd ($N = 4$)	Yes ($N = 7$)	Yes ($N = 1$)
	3rd ($N = 1$)	No ($N = 3$)	No ($N = 9$)
	4th ($N = 0$)		
Nursing	1st ($N = 1$)		
	2nd ($N = 1$)	Yes ($N = 3$)	Yes ($N = 4$)
	3rd ($N = 1$)	No ($N = 3$)	No ($N = 2$)
	4th ($N = 3$)		
Occupational therapy	1st ($N = 1$)	Yes ($N = 1$)	Yes ($N = 5$)
	2nd ($N = 1$)	No ($N = 4$)	No ($N = 0$)
Physical therapy	1st ($N = 0$)	Yes ($N = 0$)	Yes ($N = 3$)
	2nd ($N = 3$)	No ($N = 3$)	No ($N = 0$)
Total	$N = 24$	Yes ($N = 11$)	Yes ($N = 13$)
		No ($N = 13$)	No ($N = 11$)

which allowed for broad representation by students and faculty from areas such as Engineering, Development Studies and the German Languages Department. None of these extra attendees were included in the evaluation of the *Health in the Global Context* seminar series.

Evaluation methods

Using qualitative methods, specific areas were evaluated as follows: participants' expectations about and reactions towards IPE; participants' opinions about the appropriateness of global health as an area for IPE; and the value and perceived obstacles and benefits of the IPE experience provided by the seminar series. Students enrolled in *Health in the Global Context* were asked to:

1 Fill out a pre- and post-seminar series questionnaires comprised of brief demographic information relating to participants' discipline, previous exposure to IPE and three open-ended questions relating to students' expectations and recommendations about the seminar series (Appendix I).

2 Submit a one-page reflection pertaining to a seminar of choice on any insight gained towards global health and/or interprofessionalism.

3 Participate in a focus group following the completion of this seminar series (Appendix II).

In total, 28 pre- and 24 post-course questionnaires and 24 reflections were collected. Also, 22 students participated in three focus groups with six to eight students of mixed faculty in each. The focus groups were conducted by the student coordinators with minimal supervision from faculty advisors. Focus groups were audio recorded and transcribed verbatim. By using focus groups as a means of collecting data, the authors were able to assess consistent and diverse views within the group (Patton 2002). Furthermore, interactions between participants enhanced the quality of data by stimulating conversation and thought process (Krueger & Casey 2000). In order to increase trustworthiness and credibility of qualitative analysis, triangulation of data methods, triangulation of investigators, and peer examination was used as cited in Krefting (1991). Themes described by participants were captured by open coding. Researchers independently read and coded verbatim focus group transcripts, pre- and post-seminar series questionnaires and student reflections to achieve triangulation. Data were also read and coded by research advisors. Brainstorming sessions occurred between the researchers and advisors to

discuss inter-relationships between codes and determine common themes. Every effort was made to ensure trustworthiness as advocated by Krefting (1991).

Evaluation findings

Data obtained from pre- and post-seminar series questionnaire of the 24 participants are summarized in Table 2.

In relation both to IPE and global health, it was found that this seminar series provided a unique and positive learning experience for participants that was otherwise unavailable through the formal curricula. Four themes emerged from qualitative analysis: (i) global health as a vehicle for IPE; (ii) value of sharing a common interest; (iii) perceived practice implications; and (iv) recommendations for improvement of the seminar series. To illustrate these findings, we will provide direct quotes from the participants with their discipline abbreviated, for example, N, nursing student; M, medical student; O, occupational therapy student; and P, physical therapy student. To distinguish different individuals, all participants have been given a number.

Theme 1: global health as a vehicle for interprofessional education

After completing the seminar series, most students highlighted the 'value of sharing similar goals', 'role blurring' and the 'value of teamwork' in global health initiatives as concepts that have influenced their perspective on IP collaboration. One nursing student stated:

> I really felt that global health was a good way to draw us all together ... I think that just because collaboration is required, it is necessary for us to think as a team and that would provide a good foundation for working collaboratively. (N1)

Value of sharing similar goals

From listening to experts, most students found that the global health initiatives discussed during the seminar series had similar long-term goals, regardless of the profession leading the project. Ultimately, students felt all experts focused on the 'big picture', improving the health of communities through broader social constructs, such as sustainable economies and improved infrastructure, rather than strictly classical medical interventions as might be defined by professional standards in Canada. An occupational therapy student stated that:

> I found it interesting that we all come with our specialties from our discipline, but in the end what I got from the presentations was that they're all doing the same thing ... at the end of the day it seems we're all trying to get to the same goal. (O1)

Role blurring

Many students appeared to see their respective professions' as being confined to specific roles, whereas they recognized that in global initiatives, professional roles are often 'muddied'. Hearing guest speakers talk about common goals of improving social health from an IP perspective did not necessarily help to clarify the specific roles of each health profession; however, it did improve some participants' understanding of how different professions could contribute towards achieving the ultimate goal of improving health and social conditions in a community. One medical student stated that:

> I don't feel that I gained a better perspective of what each professional does ... but [this seminar series] bettered my understanding of how they could contribute. (M1)

Value of teamwork

The seminar series offered students an opportunity to see how teamwork between multi-disciplinary health professionals in global health work could lead to more successful health outcomes. As one physical therapy student stated:

> Promoting strong partnerships and mutual respect between different professions seems essential ... the only way to make a positive, sustainable impact in care abroad is by working together. (P1)

By exposing students to the experiences and knowledge of multi-disciplinary experts in the field of global health, participants of all disciplines were able to see the 'big picture' that included all professionals working towards similar goals, each with

unique contributions to offer. As a result, traditional roles seemed less entrenched. This, into itself, can be a challenge with using global health as a vehicle for IPE. Leaviss (2000) describe two effects of undergraduate IPE initiative as being attitude changes and role knowledge. The former seems to be supported by this study as participants gained greater mutual and self-respect between professions. However, role knowledge was not as clearly defined. Students found that in a global context, role boundaries are often much less stringent. Since each expert worked towards similar goals, often outside the realm of traditional healthcare, the specific attributes of one profession to another were often 'muddied'. Although some students felt this 'global' view of teams working towards the same goals regardless of professional designation could be beneficial to bring to the Canadian healthcare system, this may be in contradiction to studies which claim that knowledge of each others' roles is a key determinant for successful collaborative practice (D'Amour *et al.* 2004; Pearson & Pandya 2006).

Theme 2: the value of sharing a common interest

Student participants from all faculties indicated that they were drawn to this seminar series due to a common interest and developed IP relationships and understanding through this shared interest. The students' primary expectation of the seminar series was to gain a greater understanding of global health issues, with IPE being a secondary benefit. Participants felt that previous attempts to integrate IPE into the formal curricula, such as IP communication modules, seemed 'forced' and, as a result were ineffective. One medical student stated:

> I just think it's nice to let people find a common interest and work from there to integrate the backgrounds of the different disciplines as opposed to ... an evening elective on 'working with other disciplines', I don't think you'd get such a great attendance. (M2)

There is evidence to suggest some students feel IPE is not as important as their profession-specific learning experiences and is unnecessary in already overloaded curricula (Davidson & Lucas 1995; Fallsberg & Wijma 1999). This study found similar attitudes in students towards IPE venues that they had previously been exposed to. Although students recognized the importance of IPE, they felt current methods were often 'forced' and, as a result, unsuccessful. In order to be successful, shared learning needs to be meaningful for students (Cooke, Chew-Graham & Wakefield 2003) and should 'enhance motivation to collaborate by enabling participants to have productive learning relationships' (Barr *et al.* 2000, p. 8). By bringing students together on their own volition through a common interest that has relevance to each discipline, this seminar series tapped into this construct. Students recognized IPE as secondary to the topic being covered, indicating that choice and meaning in subject matter were essential to the success of this seminar series as a venue for IPE. An argument for having IPE as electives rather than required courses is that choice should ensure that those participating will be more 'interested and committed' (Lary *et al.* 1997, p. 68). Alternatively, Oandasan & Reeves (2005a) highlight contrasting opinions that having IPE as an elective gives the message that the material to be covered is not essential for health professionals to learn. This study appears to support the former. However, participants recognized the importance of IP collaboration, which may suggest that choice among a required set of IPE courses within formal curricula may be a way of integrating these two concepts. The challenge may be to find subject areas, such as global health, that provide a common interest to all participating professions that emphasize overlap in knowledge as well as the uniqueness among professional groups (Horsburgh *et al.* 2001). This could ensure that each profession attains specific knowledge, yet learns the value and significance of the other profession's potential contributions (McPherson *et al.* 2001; Ross & Southgate 2001).

Theme 3: perceived practice implications

Data demonstrated that students entered the course with certain assumptions about one's own profession and those of others. As a result of this

seminar series, these assumptions were challenged – empowering each professional through mutual esteem, self-respect and trust. This theme can essentially be broken down to four primary areas: empowering one's own profession, building mutual respect for other professions, challenging stereotypes and establishing relationships and trust.

Empowerment of one's own profession

By being exposed to the successes and strategies of experts from their own professions, most students saw their own professions in a more affirmative light. Students took a more egalitarian stance towards others and did not feel that one's title limited them as to what sort of impact they could make internationally and locally. One nursing student claimed that:

> From a first year nursing perspective, I thought that nurses were kind of the bottom of the barrel when it comes to the chain but I found out now that there really isn't a chain and that my opinion on things can matter. (N2)

Building respect for other professions

Building mutual respect across disciplines was also evident. Students often were impressed at the scope of practice of experts from other professions and at the impact of their work. One medical student stated that:

> 'Being aware of [other professions'] potential contributions in an international context, no one profession has any more power or any more influence than any other discipline which is something that [I'd] originally thought.' (M3)

As further evidence towards this, when prompted to identify their favourite seminar throughout the series, the majority of students who responded identified a lecture from an expert outside of their own profession.

Challenging stereotypes

Upon entering the course, many of the nursing, occupational and physical therapy students saw their own roles as less important because of the '*strong focus on the status of a doctor and the contributions they can make here or overseas*' (P2). However, these assumptions were challenged as a result of this seminar series. One medical student said:

> [Other professions] were setting policy and leading trips overseas whereas the traditional models have, if anything, a physician lead a team ... starting from a purely medical basis ... [This seminar series] has given me a better understanding of why would we work towards having [IP] teams internationally. (M4)

To add to this, the participants' recognized the importance of challenging these misconceptions early in their education. As one occupational therapy student stated:

> I think if you expect students to wait until they are graduating, it's too late. They have already formed their opinion or misconception of what another profession is responsible for doing. It doesn't help to build trust, respect or communication. It just reinforces negative stereotypes. (O2)

Establishing relationships and trust

Discussion among the students during group work, question/answer period and the case-based scenario class also facilitated learning about each others' professional perspectives and ultimately fostered collaboration, relationship-building and trust. One such example was during the IP case-based scenario class where a nursing student stated that:

> I found that it was really beneficial to hear, especially from the group discussion, that we had different perspectives on a problem. It made me realize that you have to work so much more together because you do have different views on how you tackle a problem – so I thought that was really beneficial to see how that happens. (N3)

Increasing assertiveness and building mutual respect and trust between healthcare providers are considered essential facets to successful IP practice (Carpenter 1995; D'Amour *et al.* 2004). Oandasan & Reeves (2005b) argue that students enter a given health profession with a set of attitudes, beliefs and understandings of what that profession means to them, and how they see themselves in a professional role in the future. For example, Reeves (2000) found

that nursing students generally felt they had lower academic status and their intended profession was less 'prestigious' than medicine. This is reflected in this study when students talk about the '*strong focus of the status of a doctor*' (P3) and nurses being '*at the bottom of the barrel*' (N2). Although it is unclear whether such attitudes are fixed (Rudland & Mires 2005), these findings support earlier evidence that IPE can change attitudes, empower one's own profession, foster respect for others' professions, build relationships, and reduce misconceptions that hinder teamwork (Barr 2002; Pearson & Pandya 2006). This study was supported by results of Munoz & Jeris (2005) who found participants gained a realization of the importance of mutual respect and acceptance of the perspectives of others for the development of effective collaboration. Students may begin to be successful in this by diminishing negative stereotypes and developing more positive attitudes towards their own and others' professions (Oandasan & Reeves 2005b).

Theme 4: recommendations for improvement of the seminar series

Although *Health in the Global Context* was generally well received by students and guest speakers, there are a number of suggestions, both from the experience of the student coordinators as well as the student participants, that could serve to strengthen the IP learning gained in similar seminar series. These include providing more IP exposure, increasing opportunities for socialization, and providing lectures based more on the practical experiences of guest lecturers than on theory-driven material.

More IP exposure

Some students identified a need to increase presentations from IP expert teams. With the exception of one seminar run by a group of IP students, there was no representation from any IP team who had worked together globally. It was felt that engraining a more IP framework into the development of this seminar series could have further expanded the applied lessons of IP teamwork abroad and locally.

Increased socialization

This seminar series included a class that involved students breaking up into three IP groups and working together on case-based scenarios in IP teams to integrate communication and problem-based learning. The response to this session was mixed: some students found it forced or confusing as to what was needed to be done, while others felt it clearly demonstrated and provided IP collaboration. Regardless, it was fairly unanimous that students were keen to have had more opportunity for IP collaboration, formal discussion and informal socialization in the seminar series.

Less theory-, more experience-driven lectures

Students recognized two overall types of lectures: those that were more 'theory heavy' (i.e. tended to focus on concepts and philosophies) and those that were more narrative (i.e. experiential) in nature and focused more on practical applications relevant to current or future practice. The majority of students preferred narrative/practical lectures as opposed to more theory-based lectures. Not surprisingly, students were drawn more to speaker who they found 'inspiring', experts who told stories, focused on lessons learned, and explicitly emphasized how students could get involved.

Communication is naturally considered a vital aspect of IP teamwork in healthcare (D'Amour *et al.* 2004; Rudland & Mires 2005). Cooke *et al.* (2003) argue that if the primary goal of IPE is to increase understanding and build IP relationships, the learning environment should be integrative, interactive and open to honest communication where participants feel their contributions are valued. Discussion encourages understanding, leads to diverse perspectives being offered, adds to the overall learning of a group, and increases participant interest in the topics (Munoz & Jeris 2005). To add to this, the integration of communication and problem-based learning have been found to be an effective means of presenting IPE (Cooper *et al.* 2001). This is an aspect that could have been improved upon in this seminar series. Although problem-based learning was used in one session, group discussion was often limited as many experts presented their material

in a lecture format. To rectify this drawback, it is recommended that in future versions of *Health in the Global Context*, students be assigned to small IP groups at the start of the seminar series that could be used throughout the series for group discussion and projects. Brickell, Huff & Fraley (1997) found that IP groups of four to eight members create a learning environment that has the potential for participants to share tasks, and enable them to learn from one another. On par with increasing the amount of active communication and dialogue in class, it is recommended that more informal methods, such as a more interactive introductory session and promoting socialization outside the classroom, be promoted to enhance communication.

Not surprisingly, all participants appeared eager to learn how they could get involved in global health initiatives; therefore, most preferred narrative/practical lectures as opposed to more theory-based lectures. This is a sentiment reflected in the literature (Morison *et al.* 2003; Oandasan & Reeves 2005a). As a result, it is important to consider this in designing such an initiative and inviting experts to speak.

Faculty, both experts and advisors, play a key role in creating an environment that is supportive of the goals for IPE and indeed can act as role models for students (Parsell & Bligh 1998). Not only do faculties have the ability to control resources and aide in educational policies (Pirrie *et al.* 1998; Oandasan & Reeves 2005b) but they may also provide invaluable logistical support and strategies for optimizing learning opportunities. It is therefore vitally important for students and faculty to build a partnership in such a model. In this seminar series, on top of guest speakers volunteering time, coordinators recognized the value of the university's support of this student-run initiative through financial and administrative assistance. It is also recommended that IPE experts be consulted more frequently throughout the development and facilitation of such an initiative.

Discussion

This paper presents a unique model for IPE new to the literature – extracurricular IPE run *for students*, *by students*. Presented here is a discussion of the unique benefits and limitations of this model for IPE as well as recommendations for improvement of the seminar series.

Unique benefits of this model

Although there is no shortage of literature investigating IPE in both clinical and curricular settings, there is a limited amount of evidence researching informal IPE outside these venues (Reeves 2000). However, some studies highlight the benefit of informal IPE settings for their potential role in creating collaborative teams (Howkins & Allison 1997; Freeth & Nicol 1998; Reeves 2000).

The authors identified inherent drawbacks of this model as reflected by participants' comments and actions throughout the running of *Health in the Global Context* – namely, that students receive no official credit on transcripts, there are considerable time commitments for students on top of already busy schedules, assignments and in-depth critical analysis are minimal, there lacks an official accountability framework, and the sustainability is questionable from year to year. To add to this, the student coordinators were not experts in global health or IPE and were working primarily on assumptions based on current literature. Having only 10 weekly sessions, this seminar series was also time limited, which may have limited the effectiveness in allowing students to explore interprofessionalism (Bjørke & Haavie 2006). However, being a student-run initiative, this seminar series provided a unique model for IPE that presents an exclusive set of advantages and solutions to common challenges in delivering IPE otherwise unavailable through standard curricula: fewer limitations than in formal IPE initiatives as well as the ability to facilitate self-directed learning and offer IPE to a diverse population of students.

Fewer limitations relative to formal curricula

Administrative and logistical problems inherent to the integration of curricula from different faculties are often cited as a primary challenge of IPE (Pirrie *et al.* 1998; Cooper *et al.* 2001; Rees & Johnson 2007). These can include but are not limited to: students' prerequisite knowledge, differences in curricula, accreditation across faculties, agreeing on joint

financial arrangements, inequalities in the number of students, timetable conflicts, risk to students and/or clients, and grading (Pirrie *et al*. 1998; Rees & Johnson 2007). Each of these problems was indirectly met by this seminar series. Inclusivity was inherent as there were no admission requirements, aside from being enrolled as a health science student. Faculty administration, although lending their support, were not intimately involved making challenges in accreditation irrelevant. Only a very modest budget was required with no cost to the participants. Relative to the cost of formal IPE initiatives at this university, this point cannot be understated. Students of different disciplines were consciously represented in relatively equal numbers. Scheduling was less challenging as lectures ran in the evenings. Finally, with no formal assignments, competition between students was non-existent and students were able to learn and build relationships in a less competitive environment.

Facilitating self-directed learning

Rather than being required to attend due to degree requirements, students were shown to take ownership of their education and gain knowledge in areas of interest that they found relevant to their future practice. Students developed this seminar series to contribute knowledge to both themselves and their colleagues that was otherwise unavailable at this university. Without assignments or a formal teacher, there was no hierarchical structure; students, including coordinators, were on an equal footing which facilitated interaction and building of relationships. Student leadership in an IP environment helps facilitate collaboration among students and their peers (Hoffman *et al*. 2008). This non-traditional form of teaching creates an environment which breaks down power differentials and promotes a more equal environment to engage in IPE learning (Hoffman *et al*. 2008). This fosters more receptive learners who are willing to be more open to new perceptions and experiences (Hoffman *et al*. 2008).

Diversity of participants

The integration of students from different faculties and of varying academic and clinical levels was a particularly unique aspect of this seminar series. There has been considerable debate about when to introduce IPE into the curricula of pre-licensure health professionals; often balancing between challenging negative stereotypes before they can be formed and promoting early collaboration (Barrington *et al*. 1998; Parsell & Bligh 1998; Leaviss 2000; Oandasan & Reeves 2005a) vs. having a sound knowledge of one's professional roles and exposure to clinical care (Petrie 1976; Arkesog 1994; Parsell & Bligh 1998; Oandasan & Reeves 2005a; Rudland & Mires 2005). In this seminar series, all healthcare students, regardless of level of academic study, were invited to participate. This allowed a unique variability among participants that spanned not only a range of disciplines but also level of study and clinical experience. This may have facilitated IP peer-to-peer learning and mentoring that would otherwise be unavailable if IPE were to take place at a specific level of study and could be an area for future research. To add to this, increased socialization helped to create relationships that extended beyond the classroom and the clinic; this can contribute to the building of mutual trust and respect between individuals (Hoffman *et al*. 2008).

Open lectures (those open to students and faculty outside the health sciences) promoted a higher level of interprofessionalism that included faculties outside traditional healthcare disciplines. This was indirectly congruent with the 'big picture' theme of improving healthcare through broader social change via multi-disciplinary contributions as was highlighted by participants. Among the traditional foci of IPE – preparing for collaborative practice, learning to work in teams and developing services to improve care, Barr (2007) describes a focus of IPE as 'improving the quality of life in communities' to which this seems complementary and may have been an indirect benefit of *Health in the Global Context.*

Limitations

Focus groups were conducted by student coordinators presenting a clear bias in both the presentation of questions and the responses of participants. In the future, it would be recommended to have impartial third parties conduct these interviews. Also, due to

a lack of literature on student-run IPE initiatives, and a lack of expertise in IPE and global health, student coordinators were often limited to speculating as to what might be appropriate in designing this course.

Conclusion

Although this study does not provide conclusive evidence, it does point to the potential value of student-run initiatives for IPE. It also suggests the unique benefits and challenges of using global health as a vehicle for IPE. Future study is required to provide stronger support for such IPE initiatives could include gathering quantitative data using such tools as the interprofessional education perception scale (Luecht *et al.* 1990), use of a control group, and studying long-term effects of such initiatives on participants' attitudes and care provision.

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Appendix I Qualitative questions as presented on the pre- and post-seminar series questionnaire for 'Facilitating and evaluating a student-led seminar series on global health issues as an opportunity for interprofessional learning for health science students'

- Would it be/has it been beneficial to you to participate in the 'Health in the Global Context' seminar series with other healthcare professional students? Please explain your answer.
- My concerns/hopes about learning in an interprofessional environment are:
- What are/were your expectations for this seminar series? Were your expectations of this seminar series met?

Appendix II Focus group questions for 'Facilitating and evaluating a student-led seminar series on global health issues as an opportunity for interprofessional learning for health science students'

1. Expectations
   What were your expectations for this course? How were/weren't they met?
2. Perceived benefits/challenges
   Was this seminar series a positive experience? Do you think there will be any impact on your future studies/practice?
3. Attitude changes
   Do you think that participation in this seminar series has changed the way you think about students/professionals from other disciplines?
4. Representation of participants
   When you think of students in this course, do you think that their attitudes towards IP education are typical of individuals in their professions?
5. Course format
   How suitable was the format of the course?
6. Global health as a topic for interprofessional education
   What is it about global health that makes it suitable/unsuitable for interprofessional learning?
7. Experience with interprofessional education
   What sort of IPE have you had in the past? Do you think that there enough IP training in your course of study?
8. Perceived need for interprofessional learning opportunities
   Do you think IPE is valuable/necessary? Is IPE a benefit to your development as an effective healthcare professional?
9. Implementation in other contexts
   What might be barriers/enablers to providing positive IP learning experiences to health science students?