

# An interprofessional problem-based learning course on rehabilitation issues in HIV

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**SUMMARY** *This study examined students' perceptions of their learning through participation in an interprofessional problem-based course on rehabilitation and HIV. Students representing five health professions participated in an eight-week tutorial course. Qualitative analysis of journals that the students completed throughout the course, and of interviews of the students at completion of the course, revealed that they valued their learning experience. Students gained an appreciation of the roles of others and developed a sense of confidence through justifying their professional role. Through the interprofessional discussions, students were able to increase the breadth and depth of their learning and also gained a rehabilitation perspective. Learning related to HIV and rehabilitation is ideally suited to an interprofessional, problem-based environment.*

## Introduction

A variety of educational models and interventions for teaching health professionals about HIV/AIDS have been described in the literature. These have focused primarily on changing knowledge, attitudes and willingness to work with persons with HIV/AIDS (PHAs) (e.g. Armstrong-Esther *et al.*, 1990; Feit *et al.*, 1990). Early models targeted physicians and nurses; this was reflective of the terminal nature of the illness in the 1980s and early 1990s. With the advances in pharmacological management, PHAs in industrialized nations are now living longer. HIV/AIDS is viewed as a chronic rather than primarily a terminal illness. The result has been a proliferation of a variety of impairments and disabilities that are amenable to rehabilitation efforts (Nixon & Cott, 2000).

This relatively recent shift in the natural history of HIV/AIDS has resulted in a lack of appreciation of the role of rehabilitation in the management of HIV-related disability. Education on theoretical and practical approaches to rehabilitation for persons with HIV/AIDS is lacking in health professional education programmes (Cross *et al.*, 2000). The complexity of HIV/AIDS from social, psychological, biological and ethical perspectives is ideally suited to a coordinated, interprofessional educational approach. However, little attention has been paid to the development of interprofessional educational programmes related to the rehabilitation of PHAs. Strauss *et al.* (1992) described an interdisciplinary educational approach related to HIV; however, this did not appear to promote understanding of the roles of other health professionals. Other educational initiatives that focused on rehabilitation professionals limited the number of professional groups participating in the programme of study (Bagolun *et al.*, 1998).

The call for an increased emphasis on interprofessional education in the health sciences has been widespread. In 1988, the World Health Organization (WHO) discussed the importance of interprofessional education and collaborative practice within healthcare to provide promotive, preventive, curative, rehabilitative and other health-related services. There is some evidence indicating that patient health outcomes are superior when delivered by healthcare teams, though this is minimal and fraught with methodological challenges (Richardson *et al.*, 1999; Schmitt, 2001). In a recent Cochrane review examining the effects of interprofessional education on professional practice and healthcare outcomes (Zwarenstein *et al.*, 2002), no studies met the inclusion criteria of rigorous study design and inclusion of outcomes that directly affect the organization and delivery of patient care. In a recent comprehensive review Barr (2001) states that emerging evidence suggests that interprofessional education contributes to improving collaboration under favourable conditions. In spite of the lack of strong evidence to support the long-term effects of interprofessional education, there is broad support for its philosophical basis. The argument goes as follows: if students in the health sciences gain a better understanding and appreciation of one another's roles in the provision of healthcare services and also learn to respect and value the input of other disciplines in the team decision-making process, then interprofessional collaboration is more likely to occur following graduation. Collaboration, in turn, will result in improved quality of care, efficiency of care, and ultimately better health outcomes for patients/clients. Byrne (1991) and Clark (1997) suggest that a coordinated and integrated approach to care is particularly important in the management of chronic and complex health problems.

A problem-based learning (PBL) educational model would appear to be ideal for promoting appreciation and respect for the roles of other professions. In PBL, discussion centred on actual cases leads to definition of learning objectives and group-driven information gathering. The sharing of information and the discussion and debate that occurs through the small-group tutorial process promotes understanding of roles and teamwork. While the use of small-group discussions in HIV/AIDS educational initiatives has been described, these have not utilized an interprofessional or a problem-based approach.

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There is a need for development of curricula that not only increase the awareness of the role of rehabilitation in the continuum of HIV-related illness but also promote client-centred, interprofessional approaches to management. Do students value learning about rehabilitation management of PHAs in an interprofessional learning format? Does an interprofessional learning format promote understanding of the roles of other health professionals in the rehabilitation of PHAs? What are the perceived advantages and disadvantages of learning about the role of rehabilitation in HIV in a small-group interprofessional format? The purpose of this study was to evaluate the students' perceptions of their learning through participation in an interdisciplinary problem-based tutorial course focusing on rehabilitation issues in HIV.

## **Methods**

Senior-level students from the occupational therapy (OT), physiotherapy (PT), medical (MD), nursing and social work (SW) programmes were invited to participate in an eight-week interprofessional tutorial course entitled, 'Rehabilitation Issues in HIV'. Those interested were invited to submit a brief letter outlining why they were interested in the project and their commitment to attend. Students were selected based on their seniority, motivation, willingness to attend all sessions and insight into the complexities of HIV/AIDS. Two students from each of the programmes were selected from the applicants to form two tutorial groups of five students each. All students were female with a mean age of 25 years.

Two experienced tutors from the Faculty of Health Sciences at McMaster University were recruited to participate. One of the tutors was a physician, the other was an OT. Both had an interest in HIV and were highly experienced group facilitators. Two PHAs were recruited as 'resource tutors'. The role of the resource tutor was to provide insight from the clients' perspective and prompt and question students to consider varying aspects of the problem. Further information regarding the role of the resource tutor can be found in Solomon *et al.* (2003, in press). The resource tutors, the faculty tutors and students were paid an honorarium for their participation in the project since the tutorials were a research activity and not part of the usual curriculum.

The two-hour tutorial sessions were held weekly over an eight-week period. During this time students studied four healthcare problems. These problems were developed by the investigators and an advisory group composed of professionals from a variety of disciplines and PHAs.

As a requirement of participation students kept a journal describing and reflecting on their experiences in the tutorial. Reflective journals are a learning and evaluative educational tool that encourages self-evaluation and integration of learning (Perkins, 1996). Students were asked to reflect on their personal objectives, any challenges and successes they encountered in the tutorial setting, personal learning that occurred as a result of participating in the project and any other general perceptions about their experiences. Students were expected to write in their journal at least once a week. At the completion of the project all students, tutors and resource tutors participated in a semi-structured interview. All interviews were audiotaped.

At the end of the course students were also asked to rate their perceptions of the amount of personal learning that occurred as a result of their participation in the project. Students indicated their rating on a seven-point Likert scale with 1 indicating "there was no new learning related to the objective" and 7 indicating "there was extensive learning related to this objective".

## **Analysis**

The audiotapes of the interviews were transcribed verbatim and entered into the Ethnograph computer program. The students' journals were entered directly into the Ethnograph program. The analysis of the audiotapes and interviews used an open-coding technique as described by Strauss & Corbin (1998). The analysis began with a line-by-line review of each journal and interview transcript to identify and code specific phenomena related to interactions with the resource tutors and any reflections that the students, tutors or resource tutors had about the interactions. Following the initial coding a constant comparison technique was used to identify patterns in the data by analysing and comparing the information in each coding category. The codes were reviewed and grouped into larger categories (themes) and refined subcategories (sub-themes) that reflected common experiences and perceptions.

## **Results**

Nine of the 10 students who volunteered for the tutorial course submitted complete journals and were interviewed within two weeks of completion of the course. One of the MD students was unable to free herself from clinical responsibilities after four weeks of participation, so failed to complete the project.

### *Students' rating of educational objectives*

The educational objectives and the mean of the students' perceptions of the extent to which the objectives were met are shown in Table 1. Students' ratings were consistently high, ranging from a low of 5.87 out of 7 for understanding how models of rehabilitation could be applied to the management of HIV, to a high of 7 out of 7 for developing an appreciation of the psychological, social, political and ethical issues that influence a PHA.

### *Themes*

Five broad themes were identified through the content analysis: (1) factual knowledge; (2) benefits to interprofessional learning; (3) rehabilitation insight; (4) sense of confidence; and (5) enjoyment. The overall themes and sub-themes with representative quotes are provided below.

(1) *Factual knowledge* The students identified factual knowledge they had discussed during their tutorial experiences. The factual knowledge emerged in three subthemes (a) specific HIV/AIDS knowledge; (b) social and ethical issues; and (c) knowledge of the roles of other health disciplines. (a) *Specific HIV/AIDS knowledge.* Students referred to discussion and learning within the tutorial setting that was

**Table 1.** Students' perceptions of the amount of learning that occurred for each educational objective<sup>a</sup>.

Course objectives Students will:	<i>x</i> rating of amount of new learning (SD)
Understand the basic principles of the biology of HIV disease, its progression and its transmission from person to person	6.75 (0.46)
Become familiar with the types of medical and non-medical interventions that are commonly used to maintain the health of people with HIV, and the effect of these interventions on their quality of life	6.12 (0.64)
Understand the management of HIV as a chronic as opposed to a terminal illness.	6.37 (.51)
Understand how models of rehabilitation may be applied to the management of clients with HIV.	5.87 (.83)
Develop an appreciation of the psychological, social, political and ethical issues that have an influence on the experiences of a person living with HIV, and on their rehabilitation	7.00 (0.00)
Understand the various roles and contributions of healthcare and social service professionals in the rehabilitation of clients at different stages of HIV disease	6.75 (0.46)
Develop skills in communicating, planning and decision making with an interdisciplinary group of professionals.	6.50 (0.53)

*Note:* <sup>a</sup>Students rated their perception of the amount of personal learning that occurred as a result of participation in the course on a seven-point Likert scale where 1 = no new learning and 7 = extensive learning.

related to knowledge and facts about the natural history, the pathology and related signs of symptoms of HIV/AIDS:

We discussed lipodystrophy and the way that it alters a person's appearance. There is also wasting and lesions that appear on the face and body. (Journal—nursing)

I'm starting to appreciate the extensive number of symptoms someone with HIV may go through. After discussing only three clients so far in tutorial, I feel as though I have a better understanding of how many symptoms from the disease, and side effects from certain medications, actually exist. (Journal—OT)

Well it's not a life threatening end of disease anymore . . . the implications of having it is stressful to your body but now there's ways of managing it and I didn't really understand that until I started the group. . . . It doesn't have to be the end of your life but we can manage it for years. (Interview—SW)

(b) *Social and ethical issues.* Many social and ethical issues arose as a result of the tutorial discussions:

We had a couple of ethical discussions today also that I found insightful and useful. For example, the gentleman we were studying had decided to stop medications and was nearing the end of life. He, however, was in denial and stated that he was not going to die. We talked a little about spirituality and whether it would be right to initiate discussion about mortality and his beliefs. When he is so insistent on staying in the state of

denial, is it therapeutic for the health care professional to push him towards acceptance or not? We had some interesting points come up but the one thing we all agreed on is the importance of client-centred care and treating each patient individually. (Journal—nursing)

In today's session, many ethical issues were discussed. We addressed the issues of needle exchange, anonymous testing for HIV, and partner notification when someone has tested positive for HIV. I think the group learned a lot about legal information in regards to informing previous and current partners of a person who has just tested positive. Furthermore, we discussed our thoughts on the pros and cons of where individuals can receive medical attention, in clinical or street settings. Great discussions! (Journal—OT)

(c) *Knowledge of the roles of other health disciplines.* Virtually all students stated that they gained increased knowledge and understanding of the roles of the other disciplines. Students recognized that they came to the table with preconceived ideas and stereotypes of other professions. They appeared to gain a greater respect and appreciation of the contributions of others.

I have also begun to understand what each profession brings to the care of the patient. It has been extremely beneficial because each one has certain knowledge and approaches to situations. I have appreciated the variety of assessment tools and resource information that they bring to class. (Journal—OT)

Before this class I had strong opinions, which were based on prior experience with Dr.'s. When I met the med student, she changed that for me. It is important to study and work together so we are not separate silos operating under different parts of a system. (Journal—SW)

(2) *Benefits to interprofessional learning* Another broad theme was related to the benefits of interprofessional learning. These benefits go beyond the specific knowledge of roles of other professionals that the students gained through their interactions. There were two sub-themes: learning together and breadth of learning.

*Learning together.* Students spoke and wrote of an increased awareness of how much more they achieved when they worked together and of how they were able to build on each other's knowledge to increase their learning:

We started out with a medical point of view (the natural history of the disease) and then moved on to Alex's\* issue of 'working out' and muscle building. The PT student covered this topic. After that we tied those ideas in with ADLs and the effect muscle wasting would have. This topic was introduced by the OT. Next the social worker focused on finances, which was very useful and the nursing students focused on self-concept and L's theory. It really made me see how the problem would be handled differently by different health care professions and lent an idea of how we can work together. (Journal—nursing)  
(\*name of the healthcare problem students were studying)

I think the biggest thing was that how much knowledge ... how much everyone in the team can learn from each other. I think it was demonstrated every single week. And we brought in stuff and realized that everyone is able to fill the gaps of everyone else—and if we could rely on each other more as a team than just as individual health care providers the amount of good you can do for someone just multiplies itself. (Interview—nursing)

We, as a group are using each other as stepping stones to go that extra step further in understanding clients. (Journal—OT)

*Breadth of learning.* Students became aware of the increased breadth of learning that occurred from interacting with students from other disciplines. Students indicated that they had a more holistic view of their role and of others following the experience:

I think—especially with the rehabilitation end of HIV—it was really beneficial to have interdisciplinary because I think nurses do have some sort of a role in it but there is a huge role for all the other professions too. And if I just take in this and tried to learn about HIV rehabilitation with nursing I would have missed a lot of the picture. (Interview—nursing)

I especially appreciate the perspectives from social work, the PT and the OT ... the nurses too, but their roles are similar to mine, or at least their approaches seem to be. (Journal—MD)

(3) *Rehabilitation insight* Students seemed to gain a broader understanding of rehabilitation and appreciated that different professions had slightly different interpretations of rehabilitation. They also appeared to gain insight into the importance of a client-centred approach to management, which is an important element of a rehabilitative approach. While client-centred practice is an integral component of the education of PTs and OTs, it is generally not common to the lexicon of the other professions:

I never knew that there were so many ways and means to energy conserve for example. And just with someone who's very fatigued and may not have the energy reserves that they need to do their daily activities—I had no idea. Like that you could have special spoons and special carts that allow you to transport food and all these kind of things that we never discuss in my particular profession. (Interview—MD)

... initially before I went into the project I was thinking more palliative care and how are you going to deal with issues of grief and loss and that sort of thing. But to take it from a rehabilitation end, with all the new drugs coming out, it was completely a surprise to me how much can be done and how much is being done. (Interview—nursing)

It only adds to my beliefs that each person's experience of a disease will be completely different from others and thus any type of rehabilitation and intervention will have to be personalized to their specific needs. (Journal—SW)

(4) *Sense of confidence* As students progressed through the tutorials, they gained a sense of confidence in knowing what their role would be in dealing with someone with HIV/AIDS. They became aware that much of their previous background knowledge and experience was relevant and germane. In having to explain and advocate for their disciplinary role they learned more about what their specific profession could offer and of the applicability of their knowledge and skills:

Often every professional did not know that the skill base that they had was completely applicable to HIV and I think there was a strong feeling—if you were an OT or a PT or a social worker ... nursing and medicine understood, they have a role, but in the other fields you know they were used to "well I do this in stroke" and then a light bulb would go off—and "it's well I can do that same thing in HIV". (Interview—resource tutor)

... not a lot of us had a lot of experience with (HIV) but you can rely on so many other things you've learned in your past and apply it to so many different situations and things that we hadn't really

thought about that we could do for someone with HIV that you are doing for other clients too. (Interview—nursing)

It was challenging for me just based on our own biases and assumptions and I guess I'm more aware of that. I just have a deeper knowledge of it. I feel more confident. I'm not as afraid of it. (Interview—SW)

(5) *Enjoyment* In spite of the fact that this experience was in addition to their regular academic and clinical studies, students reflected on a sense of enjoyment. Many described an experience that provided a major insight for them and a change in their thinking as a result of the tutorial:

... I loved going to tutorial every week. I leave (clinical) placement saying "okay gotta go, see you later" and I would love going even though it was till six at night. (Interview—PT)

I am learning so much from the members of my tutorials, their different professions and their roles with people living with HIV. I am very eager to begin the next case scenario next week. (Journal—OT)

For the first time I am seeing and feeling the breadth of health care. It's great... I really feel like my understanding of 'health care' is opening up. (Journal—MD)

## Discussion

This study examined the students' perceptions of the value of interprofessional education related to HIV from a qualitative perspective. Barr *et al.* (1999), in a review summarizing the status of evaluating the effectiveness of interprofessional education, suggested that qualitative methods may be more useful in examining this question. Qualitative methods are well suited to examining complex phenomena (Cresswell, 1998) and allow for an in-depth examination of educational processes.

Although we did not directly measure knowledge and attitudes, review of the journals and interview transcripts suggests that specific knowledge was gained by the students. Students' perceptions of their learning ranged from specific HIV/AIDS knowledge and facts to a broader sense of the social and ethical complexities associated with HIV. Students rated the amount of learning that occurred as high. With regard to knowledge, it is our view that it is much easier for students to acquire facts about the natural history of HIV/AIDS, pathology, signs and symptoms and pharmacological management than it is to explore their values and attitudes associated with the illness. Small-group interactive learning is most likely to assist learners in understanding values, skills and knowledge of other professions (Barr *et al.*, 1999). Owing to the stigma and social complexities associated with HIV/AIDS, attitudes are an important determinant of whether a health professional student will be willing to work with someone with HIV. The interprofessional sharing promoted discussion on social and ethical issues. Whether

similar discussions would occur in uniprofessional tutorial groups is unknown; however, it is unlikely that the breadth of information and experiences discussed would be as extensive. The extent to which the discussion, in conjunction with the reflection inherent in the completion of learning journals, promotes greater examination of personal attitudes and biases is a question worthy of future inquiry. Ultimately the issue of whether this would translate into better patient care can only be answered by long-term comparative studies.

Others have described using small-group discussions as a component of education related to HIV/AIDS. It is important to emphasize the difference between a one-time group discussion and an ongoing problem-based tutorial group. In a tutorial group the development of longer term relationships and evolution of group process can allow for more sensitive discussions. It is unlikely that a high level of honesty and self-disclosure can occur in a brief one-hour session.

From our findings it appeared that students enjoyed their interactions with colleagues from other professions and felt there were benefits to the interprofessional format. One of the primary benefits of working together is the improvement of interprofessional collaboration (WHO, 1988). The purported improvement in collaborative practice would be a long-term benefit. The Cochrane Collaboration review (Zwarenstein *et al.*, 2002) focused on the evaluation of long-term benefits related to improvement in patient care. It is equally important to examine the short-term benefits associated with involvement in the educational process. The question relates to what the students learned from this experience and whether the learning was different than if it were delivered in the context of a single profession. Recognizing the limitations of focusing solely on the benefits related to patient care, Hammick (2000) proposed a six-level model for evaluating the outcomes of interprofessional education that also includes learners' reactions to their learning experience. We support the inclusion of evaluation of the process as an additional outcome that will promote insights into the benefits of interprofessional educational initiatives.

There are opposing views as to when to introduce interprofessional education into a curriculum (Byrne, 1991; Harden, 1998; Van der Horst *et al.*, 1995). We deliberately chose senior students for this initiative, based on literature which suggests that interprofessional initiatives are most successful if one chooses students who have already developed a sense of professional identity. We believe this was important in this study as students often had to advocate for their role in the rehabilitation of HIV/AIDS. This would be difficult for students who do not have a clear idea of their possible and potential roles. The sense of confidence that many students spoke of as they progressed through the educational experience may result partially from the need to justify and advocate for their role.

As our students were volunteers, it is highly likely that they represent a group that was more open and tolerant of issues related to HIV/AIDS. This may also have influenced their perceptions of the course in a positive direction. It is also important to note that there were no male participants. While this is largely reflective of the composition of the various professions, a male perspective may have influenced the nature of the discussion and learning that occurred. As in all

qualitative research the findings should be interpreted within the context of the study.

This study has provided insight into the perceived benefits of using an interprofessional problem-based tutorial to learn about HIV/AIDS. The findings have implications for both those interested in teaching about HIV and those interested in interprofessional education. The complexities and interdisciplinary nature of HIV provided the template for diverse and broad-based discussions. There may be subject or disease-specific areas that better lend themselves to interprofessional discussion, debate and learning. Future work should examine the relative merits of other topic areas to assist those interested in designing positive interprofessional learning experiences. The course also provides an alternative educational design for those educators wanting to promote a comprehensive approach to managing HIV/AIDS. Students valued and enjoyed the experience in spite of the fact that it was in addition to their regular academic and clinical work. Learning related to HIV/AIDS and rehabilitation seems ideally suited to a problem-based, interprofessional format.

### Acknowledgement

This research was supported by a grant from the Canadian Working Group on HIV and Rehabilitation.

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