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A Conceptual Model of Optimal International Service-Learning and Its Application to Global Health Initiatives in Rehabilitation

Celia M. Pechak, Mary Thompson

Background. There is growing involvement by US clinicians, faculty members, and students in global health initiatives, including international service-learning (ISL). Limited research has been done to examine the profession’s increasing global engagement, or the ISL phenomenon in particular, and no research has been done to determine best practices. This study was intended as an early step in the examination of the physical therapy profession’s role and activities in the global health arena within and beyond academics.

Objectives. The purposes of this study were: (1) to identify and analyze the common structures and processes among established ISL programs within physical therapist education programs and (2) to develop a conceptual model of optimal ISL within physical therapist education programs.

Design. A descriptive, exploratory study was completed using grounded theory.

Methods. Telephone interviews were completed with 14 faculty members who had been involved in international service, international learning, or ISL in physical therapist education programs. Interviews were transcribed, and transcriptions were analyzed using the grounded theory method.

Results. Four major themes emerged from the data: structure, reciprocity, relationship, and sustainability. A conceptual model of and a proposed definition for optimal ISL in physical therapist education were developed. Seven essential components of the conceptual model are: a partner that understands the role of physical therapy, community-identified needs, explicit service and learning objectives, reflection, preparation, risk management, and service and learning outcome measures. Essential consequences are positive effects on students and community.

Conclusions. The conceptual model and definition of optimal ISL can be used to direct development of new ISL programs and to improve existing programs. In addition, they can offer substantive guidance to any physical therapist involved in global health initiatives.
Growth in the number of people with disabilities worldwide and unmet needs for rehabilitation challenge the physical therapy profession to expand its involvement in global rehabilitation efforts. The World Health Organization estimates that there are 650 million people with disabilities, and most live in developing countries with little or no access to rehabilitation.

Although physical therapists have the knowledge and skills to make significant contributions to global rehabilitation efforts, the physical therapy profession has had a limited role in the global health arena to date. Given that Vision 2020 in the United States are increasingly involved in global health initiatives and related activities such as promoting cultural competency. Membership in the American Physical Therapy Association’s Cross Cultural and International Special Interest Group has grown by 316.7% in the past 4 years to 225 members (Robin Childers, personal communication, April 28, 2009). The physical therapy division of Health Volunteers Overseas is now the organization’s second largest of 14 branches, with 298 members. It has experienced an 81.7% growth in the number of volunteers since 2004 and had 57 volunteers serve in 2008 (Barbara Edwards, personal communication, April 27, 2009).

Research regarding the growing involvement of the physical therapy profession in global health initiatives has been limited in scope. Most studies have focused on the involvement of faculty members and students in global health activities, such as international service-learning (ISL). Service-learning is “a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection.”8(p274) Service-learning describes not only a type of program, but also a philosophy of education that “emphasizes active, engaged learning with the goal of social responsibility.”9(p22) A reflective component is purposively incorporated in service-learning to cultivate student learning about the greater social issues creating the need that the service seeks to alleviate. Reciprocity is the underlying premise that both the needs of the server and those being served must be addressed.8,9

Interest in and research about service-learning in higher education have been growing since the 1980s and in physical therapist education in particular since the 1990s. Similar to researchers throughout higher education, physical therapist educators have promoted service-learning as an effective method for students to garner real-world learning, enhance students’ knowledge and attitudes related to professional issues, and foster commitment to service while offering meaningful service to their communities.8–15

Interest in ISL and related international service or learning activities in physical therapist education has increased over the last decade.7,16–19 International service-learning is a service-learning opportunity that occurs outside of the country where the education program is located. There is a dearth of literature related to ISL in physical therapist education. In a 2006 survey of physical therapist education programs in the United States and Canada, 27.6% (n = 24) of the US survey respondents and 50% (n = 4) of the Canadian respondents reported using ISL in the previous 10 years. Of those US and Canadian programs without ISL, 14.9% specified a plan to incorporate ISL in the following 2 years.7 Examining the effects on physical therapist student participants in an individual ISL program in Guatemala, Dockter16 noted an increased score on a subscale that measures social justice attitudes. The study supported the use of service-learning as a pedagogical tool if students are provided with adequate preparation and guidance related to realistic goal setting.

Other researchers have examined related global health activities with physical therapist students, including a medical mission,17 an international clinical education experience,18 and a research and study abroad program.19 They noted positive effects that included improved critical thinking and problem solving, greater cultural sensitivity, and an expanded worldview.

The rising trend toward including international educational activities is evident in medical education as well.20–22 Recognizing the far-reaching effects of rapid globalization on health care, medical educators increasingly advocate for global health education in all medical schools23–25 and call for international clinical experiences to be offered routinely.25 Some authors have presented guidance on how to imple-
A Conceptual Model of Optimal International Service-Learning

Table 1. Operational Definitions

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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| Service-learning               | is “a structured learning experience that combines community service with explicit learning objectives, preparation, and reflection.”
|                                | Also, “[u]nlike practica and internships, the experiential activity in a service-learning course is not necessarily skill-based within the context of professional education.”
| International service-learning (ISL) | is a service-learning opportunity that occurs outside of the country where the education program is located.                              |
| Established ISL program         | is a program that had been in existence for at least 2 years and was in existence at the time of data collection.                          |
| International service          | includes opportunities primarily focused on service activities that occur outside of the country where the physical therapist education program is situated, that faculty offer to or organize with students, and that do not meet the above-defined criteria for service-learning. |
| International learning         | includes opportunities primarily focused on learning activities that occur outside of the country where the physical therapist education program is situated, that faculty offer to or organize with students, and that do not meet the above-defined criteria for service-learning. |
| International service and/or learning | is an umbrella term that includes ISL, international service, and international learning.                                                  |

No previous study has examined how global health training should be carried out in physical therapist education. As its prevalence is expected to grow and because it is a common model for global health education, this study was specifically chosen for model development in physical therapist education programs in medical schools and residency programs.24–26 Although the medical education literature may offer some direction, physical therapist educators have the responsibility to chart their own course for future global health training.

No previous study has examined how global health training should be carried out in physical therapist education. As its prevalence is expected to grow and because it is a common model for global health engagement in physical therapist education, ISL was specifically chosen for investigation in the current study. The purposes of this study were: (1) to identify and analyze the common structures and processes among established ISL programs within physical therapist education programs and (2) to develop a conceptual model of optimal ISL within physical therapist education programs. Although focused on the academic segment, this study was intended as an early step in the examination of the physical therapy profession’s role and activities in the global health arena within and beyond academics.

**Method**

Grounded theory, as described by Strauss and Corbin,27 was the qualitative research method used for this study because of the usefulness of their method in the analysis of the relatively unknown and complex phenomenon of ISL. The operational definitions are shown in Table 1. The definition of ISL was based on the literature, and we determined the other definitions. We focused on established ISL programs, defined as in existence at least 2 years, based on the assumption that this time period would allow some degree of faculty reflection and program evaluation. We believed that informed participants engaged in such programs would yield rich data required for model development.

**Participants**

Potential participants were identified by a 2006 survey of all US physical therapist education programs.7 The intent of the pilot study survey was to determine whether ISL was a phenomenon that justified in-depth exploration as a dissertation topic and, if so, to identify possible future informants. Faculty members from 87 US physical therapist education programs responded and, of these, 36 reported some sort of ISL or other volunteer service within the past 10 years, 16 of whom provided contact information for the qualitative study. Although the research questions involved ISL rather than international service or international learning, participants who were currently involved in international service or learning in physical therapist education were included to assist us in delineating the edges of the ISL phenomenon. From the group of 16 faculty members, 3 were eliminated because they were no longer involved in an ISL program in a physical therapist education program and 2 did not respond to an e-mail requesting participation in the study. Therefore, 11 of the original 16 faculty members from the pilot study were eligible and agreed to be interviewed. In addition, the primary researcher (C.M.P.) recruited an acquaintance with ISL expertise who had not responded to the original survey. We also asked participants and potential participants to suggest other participants, resulting in a 13th faculty member. Lastly, a 14th participant was recruited after one of the researchers met her at a professional meeting. Thus, purposive and snowball selection29 were used to recruit 14 participants.

Consistent with qualitative methods, sample size adequacy was dependent upon the point when saturation had been reached, that is, when additional data collection did not add unique or significant information.27 All major themes emerged by the 12th interview. The 13th participant was recruited to maximize the geographic variation of participants, and no new theme was uncovered in that interview. Lastly, the 14th partici-
pant was recruited after she had verbalized a unique condition in her program to the researcher in casual conversation. After a formal interview, this condition did not change the developing conceptual model. Therefore, further recruitment ceased.

Data Collection and Analysis

As data collection and analysis occur simultaneously in a qualitative study, procedures for data collection and analysis will be combined in the following discussion. Telephone interviews were arranged over a 3-month period in 2007. The length of the initial interview varied from 40 to 90 minutes. Follow-up communication, for purposes of clarification or elaboration, was accomplished by e-mail, as needed. Follow-up e-mails were printed and saved.

The interview format was semistructured. All data were gathered by the principal investigator. Demographic data were obtained from all participants, which included the number of years each participant had been a physical therapist and a part-time or full-time core faculty member. Information regarding the university and physical therapist education program that each participant represented, which included university name, location, public versus non-faith-affiliated private versus faith-affiliated private university, and professional (entry-level) degree offered, also was gathered. Guiding questions (Appendix) were used to direct the interview, but questions changed within and between interviews as data accumulated, analysis was performed, and the conceptual model evolved. The operational definition of service-learning for this study was not provided to the participants during the interviews. This omission was by design for 2 reasons. First, there is no broadly accepted definition of service-learning. Second, due to the exploratory nature of this study, we sought to discover whether the participants categorized their projects as service-learning, without the influence of the study definition.

For the purpose of triangulation, other data were gathered. In addition to audiotaping the interviews, notes were taken by the primary researcher during and after each interview. Notes focused on key phrases stated by the participants, possible concepts emerging from the data, and additional questions to pursue in future interviews. The researcher requested that the participant provide a copy of the ISL syllabus and any other ISL-related documentation. Six participants provided documents, and 4 participants referred the researcher to a Web site. Information from syllabuses and Web sites allowed verification of some of the faculty and university characteristics.

Initial themes were identified through the interview notes. The audiotapes were transcribed by 1 of 3 independent transcriptionists. After receiving the transcript, the principal investigator listened to the entire interview and compared it with the written transcript to ensure accuracy. If the participant chose the option on the consent form to review the transcript, then the researcher waited at least 4 weeks for the reviewed transcript to be returned. Seven participants elected to review their transcripts; 5 of the 7 participants returned the transcript to the researcher, all with minor changes that did not affect data analysis. Their reviewed transcripts were used for coding and analysis. All interview notes and transcripts were imported into QSR NVivo7 qualitative software for data management. The principal investigator used this same software for subsequent coding and annotations.

As part of the open coding process, relevant portions of the transcribed interview were linked to a growing list of codes, and annotations were made directly on the transcript using the NVivo 7 software. Annotations were used as mini-memos that were connected to specific portions of the transcript, rather than referring to the entire transcript. Full memos also were written and were linked to entire transcripts or emerging concepts. Diagrams were used to capture the emerging themes and begin to develop the conceptual model.

With the goal to fill out the dimensions of categories and subcategories, highly purposive sampling was used to optimize opportunities for comparative analysis during the next phase. As early participants tended to represent faith-affiliated schools, subsequent participants who represented public and non-faith-affiliated private universities were specifically chosen. Sampling also was performed to fill out the dimensions of categories and subcategories to increase density and seek negative cases. For example, early participants tended to refer to faith as a strong motivating force for students to participate in ISL. Additional sampling revealed that faith seemed to play no part in student motivation at some universities. Thus, both ends of the spectrum of faith as a motivating factor were sampled.

After initial concepts and their categories emerged from the data, the data were examined for relationships. The questions of "who, what, when, where, why, how, and with
what consequences” were asked and answered to describe the complexity and dynamism of the phenomenon.\textsuperscript{27(p127)}

During the final phase of analysis, the primary researcher provided an early version of the optimal ISL model to 3 participants with requests for comment for validation; 2 participants offered feedback. Model content was not substantively changed based on their input, but the illustration was revised for clarity. One participant reviewed an earlier definition of optimal ISL and did not suggest changes.

Various methods were used to ensure methodological rigor.\textsuperscript{31} The principal investigator performed all data collection and coding to ensure consistency. However, the second researcher (M.T.), who had extensive experience in qualitative methods, reviewed portions of the first 2 transcripts and the primary investigator’s coding prior to the principal investigator proceeding with coding additional transcripts. Triangulation was used through sampling a variety of participants, asking the same questions in different ways and analyzing transcripts, interview notes, Web sites, and course documents. Additionally, purposive sampling was used to enhance validity and relevance by deliberately obtaining data from a diverse group of programs to reflect variation found in ISL in physical therapist education programs.

Role of the Funding Source
The Texas Physical Therapy Foundation funded this study through a research grant. It had no role in the design, conduct, or reporting of this study.

Results
The 14 participants used a wide array of terms to label their international programs during the interview and in the provided supplementary documents, and these terms did not always directly correspond to each other. Triangulation was used to determine whether the program met the operational definition of an established ISL program.

Three categories of groups emerged from the data. All programs shared the common characteristic of being related to international service and/or learning in physical therapist education. The first and largest group (n=8) met the operational definition of established ISL in physical therapist education. Second, the quasi-established ISL programs (n=3) were very closely related to the first group but lacked a defining characteristic (eg, they were not in existence for 2 or more years or they did not have explicit learning objectives). Third, the international service or learning programs (n=3) were primarily focused on service or learning but not both service and learning relatively equally. Analysis of data from all participants revealed how indistinct the edges of the phenomena can be in practice. However, only data from the established ISL group were used to identify and analyze the commonalities that existed among established ISL programs within physical therapist education programs in terms of structures and processes and to develop a conceptual model of and proposed definition for optimal ISL.

Participant and University Characteristics
Fourteen physical therapists with a broad range of experience as physical therapist educators and in established ISL programs, quasi-established ISL programs, or international service or learning programs provided data for this study (Tab. 2). Participants represented public, faith-affiliated private, and non-faith-affiliated private universities that were located across the United States. Thirteen of the physical therapist education programs granted entry-level doctorates at the time that the interviews were conducted, and the last program was in the process of transitioning to an entry-level doctorate.

The demographics of established ISL, quasi-established ISL, and international service or learning programs were examined separately. When looking at established ISL programs only, the most notable differences were the greater proportion of participants from private faith-based universities and the lack of representation from universities in Western states compared with all participants. When the established ISL programs were combined with the quasi-established ISL programs, however, public and private universities were more closely balanced, and only the Western US region was not represented.

Phases of Establishing an Optimal ISL Program
Five phases in the overall process of establishing an optimal ISL program emerged from the data (Figure). The development phase involved laying the early groundwork for a program. A committed faculty member and an appropriate community partner were essential elements of this phase. One participant highlighted the importance of a committed faculty member, stating, “I am completely dedicated to this project. That has got to be a huge part of it.” Characteristics of an appropriate community partner include established connections to the local community, reliability, and understanding of what service-learning is. Having had a bad experience with her first community partner, one participant said, ”Their perception of service-learning was that the Americans would come and bring them things. The money.”
Although part of the community partner’s role in service-learning is to identify community needs, the faculty member usually had to educate the partner as to what physical therapy is and what it could offer. A participant explained, “At first, you’re kind of in the spirit of discovery; we’re going to learn about each other a little bit more. It was really exciting for them to see what we could do as physical therapists because at first they kept calling us ‘nurses.’”

In the design phase (Figure), operational decisions were made in 5 key areas: placing the program in the curriculum, structuring the international service and learning components, choosing students, making logistical plans, and funding the program. Again, a committed faculty member was the essential element and was primarily responsible for designing all facets of the ISL program. Explicit learning objectives were determined in this phase.

The key activities of the implementation phase (Figure) were performing the service-learning and keeping the team safe and healthy. A committed faculty member, an established and appropriate community partner, and students were essential elements of this phase. Although not playing an essential role in other phases, students consistently were key players in the implementation phase. Common activities included collecting wheelchairs and other equipment prior to departure for the international site, providing direct care to patients, and training and educating family members and nonprofessional caregivers.

Reflection, preparation, and risk management emerged as essential components of the implementation phase. Most programs used a combination of individual journaling and informal verbal reflection as a group. One program used daily reflective readings as the framework for reflection, whereas another program used the Preparation, Action, Reflection, and Evaluation (PARE) model33 to guide reflection activities. A participant who described a one-credit class that prepares students for the international experience, stated, “They [students] each have some type of presentation that they have to do; one is on culture, one is on language, one is related to travel, one is basic travel—getting a passport, international safety and travel.”

The fourth phase was evaluation (Figure). Temporally, it partially overlapped the preceding phase of implementation. Key activities included assessing outcomes related to the student, department, and university and assessing community outcomes. A committed faculty

Table 2. Participant Demographic and University Characteristics by Program Type

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Established International Service-Learning (ISL) Programs</th>
<th>Quasi-Established ISL Programs</th>
<th>International Service or Learning Programs</th>
<th>All Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participants</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Years as a physical therapist, X (range)</td>
<td>23 (9–39)</td>
<td>24 (20–27)</td>
<td>23 (10–37)</td>
<td>23 (9–39)</td>
</tr>
<tr>
<td>Years as a physical therapist educator, X (range)</td>
<td>11 (2–28)</td>
<td>12 (6–16)</td>
<td>8  (3–11)</td>
<td>11 (2–28)</td>
</tr>
<tr>
<td>Years with international service or learning, X (range)</td>
<td>7 (2–10)</td>
<td>8 (2–13)</td>
<td>6 (4–8)</td>
<td>7 (2–13)</td>
</tr>
<tr>
<td>University type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Faith-affiliated private</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Non–faith-affiliated private</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>University locationa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeastern</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Midwestern</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Western</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Southern</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

a Data reflect how long participants had been in full-time or part-time core faculty positions, not adjunct faculty positions.
b Regions defined according to US Census Bureau32 regions.
A faculty member stated, “We took the CPI [Clinical Performance Instrument], and we looked at, in our program, where we were falling short or maybe not touching upon enough skills, and our clinical educator came up with a tool for the clinician, the PT [physical therapist], to use when supervising the student [at the international site].” In regard to community outcomes, participants were more likely to provide anecdotes of patient improvement or general statements such as, “I think the program [at the international site] benefits from the input of the teaching that we can do.” One faculty member said, “This year I am just trying to become more structured about reporting what we have done and what we accomplished. We assess the students; we always do that before and after. As far as the community itself, that is not something that we have formally done.”

The final phase, enhancement (Figure), centered primarily on the faculty member; however, communication and coordination with the community partner were essential. The key activities included improving the original program and expanding the program. One participant described plans for shifting the focus of her program, saying, “What we want to do is spend more time with the university students [at the international site]. We want to have a cultural and professional education exchange.”

Major Themes

Four major themes were identified throughout the 5 phases of the overall process of establishing ISL: structure, reciprocity, relationship, and sustainability. These themes were interwoven throughout the common structures and processes discussed previously.

Structure. The concept of structure (Figure) was the underpinning of establishing ISL. In general, structure among all key players corresponded with larger and seemingly better-implemented programs. The faculty members of the largest programs attributed their programs’ effectiveness, in part, to the structure that they had created. One participant from a large and organized program described clear learning objectives and outcome measures, tight daily schedules, and structured reflection. She emphasized, “It is structured so that it is a learning experi-
ence. I tell the students that we are not going to Cancun; this isn’t a vacation.” Another participant stated, “I think the more I get it structured around the things that I am finding out each time I go, the better it is going to get.” Community partners that were better organized were stronger partners, including being able to provide significant assistance with logistical support.

**Reciprocity.** The theme of reciprocity (Figure) emerged repeatedly from the data. Participants described the imperative of developing a reciprocal relationship with the community partner and the community. First, the community identified its own needs, usually through the community partner. Second, although the community members received service and often teaching from the faculty-student team, the participants acknowledged the community members’ roles in teaching the team. One participant said, “It’s got to be this reciprocity that is give-and-take between the person served and the person serving such that those lines are blurred; both are served and both are serving.”

**Relationship.** In addition to the importance of establishing a reciprocal relationship as described above, participants discussed the long-term personal and professional relationships that were formed or further developed after sharing intense international experiences (Figure). Participants also described how students gained a new appreciation for the value of relationships. A participant explained that the students “talked a lot about how much they learned from the people there, who really seemed to have nothing, but they had so much in terms of relationships.”

**Sustainability.** Although participants did not always use the term “sustainability” specifically, they often described the concept as a goal for their programs (Figure). The concept of sustainability applied, in part, to the long-term existence of the ISL program within the university as well as the program’s efforts at the international site. A faculty member explained, “The other thing that is successful is the longevity; the ongoing relationship, and to watch PT [physical therapist] practice improve in a developing country is just a remarkable thing.”

Similarly, the programs were intended to produce enduring changes in the students and the community. Participants routinely reported effects on students that were described as life-changing and transformative. One participant summarized the students’ feedback:

They all say it was both professionally and personally life changing. I think it is that they have to really think flexibly, that they have to work in a challenging way with patients . . . the problems are more . . . they all say it makes them think differently about people and about money, and about culture and how you meet people’s needs and our own presumptions about what people need.

Some participants also highlighted the importance of being a part of a larger rehabilitation effort that continued even after the faculty-student team returned to the United States.

**Conceptual Model of Optimal ISL**

A conceptual model of optimal ISL (Figure) was developed after analyzing the common structures and processes of established ISL and the major themes that emerged from the data. The basic tenets found in the service-learning literature and the principles of good practices for ISL found in the literature also were considered as we reflected on potential missing elements or inconsistencies.

**Definition of Optimal ISL**

Based on the conceptual model, a definition for optimal ISL emerged. **Optimal ISL in physical therapist education** is defined as a structured program of service and learning experiences at an international site that includes preparation, reflection, and explicit service and learning objectives. The service is performed in partnership with an established community partner that understands the role of physical therapy to address community-identified needs, with the goal of creating sustainable change in the community. Program evaluation with service and learning components is integrated into the design of the program and enhances ongoing program improvement for the benefit of the students and community.

**Discussion**

“Optimal” was specifically chosen as the adjective to describe the model, as it conveys the idea that the level of practice is achievable. No ISL program in the study possessed all of the elements described in the model, and thus the model has the potential to inform both new and existing programs. The following discussion will focus on the essential elements that were particularly variable or absent in the ISL programs, as well as their applicability to physical therapists’ participation in global health initiatives in general.

Each ISL program had a community partner, but the apparent fit and effectiveness of the community partner with the ISL program varied. Partner organizations with an ongoing rehabilitation effort in the community or at least a clear understanding of what services physical therapists have to offer appear to be the most effective partners. Although some participants described a rushed effort to find a community partner, the study results highlight the importance of taking the time to...
find the right partner. In the best cases, the faculty completed a site assessment prior to taking students with them. Contrasting the limited resources of the physical therapy profession against the unlimited need for rehabilitation services in underserved populations worldwide, the importance of carefully selecting an effective partner organization is applicable to educational programs and clinicians alike.

Closely related to this topic is the essential element of sustainability. Faculty members often struggled with several issues related to sustainability, some of which are similar to those discussed in the medical literature. Given limited to no funding and lack of student and faculty time, how can the ISL program continue within the physical therapist education program from year to year? Even with annual visits by the faculty-student team, can the rehabilitation efforts in the community be sustained in their absence? Can sustainable outcomes be achieved for the students and community in the typical 1- to 2-week period that physical therapist faculty-student teams are at an international site? Can the faculty member collaborate with other educational programs in order to develop continuity for the service to the community? Should the faculty member find a more suitable community partner or site?

Some participants did not mention sustainability as related to the rehabilitation efforts or community outcomes until the primary researcher initiated discussion. However, a participant from a quasi-established ISL program specifically stressed, “One of the huge advantages, and I hope this can emphasized somehow in your research, is that our site is ongoing.” This aspect of sustainability was advantageous for the community, but also it was beneficial for students to know that their service was part of a larger effort with greater potential to make a difference.

Sustainability is a consideration for any physical therapist involved in global health initiatives. Given the significant time, effort, and financial commitment that global health engagement involves, physical therapists may want to consider a project that includes training and education in addition to direct service.

Although explicit learning objectives were a component of the operational definition of service-learning and, therefore, were present in all of the ISL programs, service objectives were notably absent. Reciprocity is a central tenet of service-learning and requires that the needs of the server and served must be addressed. Therefore, we deemed both service and learning objectives to be essential elements of the model. Similarly to ensure adequate program evaluation, service and outcome measures were determined to be essential. The importance of program evaluation for both student and community components of global health programs has been raised in the medical literature. However, there has been a tendency to focus on student over community outcomes across the general service-learning literature.

Risk management was not consistently addressed by the participants. Specifically, programs did not routinely encourage or require emergency health and evacuation insurance, register with the local US embassy, or have any formal plans in case of emergency. Given risks related to high rates of traffic-related injuries and death, potential exposure to infectious diseases, and possible civil unrest in the low-income countries in which ISL is typically carried out, the need for risk management cannot be overstated. Similarly, any physical therapist involved in work outside of the United States should address health and safety issues as part of the preparation.

In addition to risk management for the students, attention to risk management for the community is needed. Despite the best intentions, there is potential for unintended harm to the community partner and its clients in ISL and other global health activities. The partner organization may expend already limited resources to host the faculty-student team without reaping significant benefit from the team’s stay. A US-trained physical therapist on the team may overstep cultural boundaries by interacting more assertively with a local physician than is acceptable and negatively affect the long-term relationship between the physician and local physical therapists. Ultimately, the principle of nonmalice should guide all physical therapists involved in global health initiatives.

Recent commentary in the medical literature has highlighted the importance of explicitly addressing ethical considerations such as nonmaleficence for short-term global health experiences. The conceptual model for and definition of optimal ISL may offer a launching point for this discussion in physical therapist education.

Limitations and Future Research

The results of the study will best inform physical therapist education programs with contexts similar to those sampled. A wide diversity of contexts was deliberately sampled, however, to increase the applicability of the model within and beyond physical therapy academia.

Research into physical therapy’s role in the global health arena is in its infancy, leaving limitless possibilities for further examination across the spectrum of global health activities. In ISL, research is particularly
indicated in the area of service outcome measures and community benefits. Should global health education be a standard component of physical therapist education, and, if so, is ISL the best model? Looking more broadly, how can the physical therapy profession most effectively and ethically expand its role in the global health arena in order to significantly improve the lives of millions of people with disabilities?

Conclusion

This study was the first investigation of the emerging phenomenon of ISL in physical therapist education in depth and breadth, just one dimension of the even larger phenomenon of the growing involvement of the physical therapy profession in global health initiatives. As the physical therapy profession matures, it increasingly is shaped by evidence-based practice and guided by best practices. Physical therapists' involvement in global health initiatives, too, should be influenced by research and best practices. The conceptual model of and proposed definition for optimal ISL can be used to direct development of new ISL programs in physical therapist education and to improve existing programs. In addition, they can offer substantive guidance to any physical therapist with present or future involvement in global health initiatives.

Both authors provided concept/idea/research design, writing, data analysis, and consultation (including review of manuscript before submission). Dr Pechak provided data collection, project management, funding procurement, and clerical support. This study was completed in partial fulfillment of Dr Pechak’s doctoral dissertation at Texas Woman’s University, 2007. This study was approved by the Texas Woman’s University Institutional Review Board. A description of the conceptual model was included in a presentation at the Combined Sections Meeting of the American Physical Therapy Association; February 6–9, 2008; Las Vegas, Nevada. The Texas Physical Therapy Foundation provided funding for this study. The authors thank the Foundation for its support. This article was received November 28, 2008, and was accepted July 20, 2009.


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A Conceptual Model of Optimal International Service-Learning


Appendix.
Semistructured Interview Questions and Probing Questions

1. You have been invited to participate in this project because of your involvement in international service-learning or other international volunteer opportunities in physical therapist education. Will you describe for me your involvement in these activities?
   - If you have been involved in more than one program or project, please choose the one in which you are currently involved. If there is time, we can discuss the other(s).

2. If you are the person responsible for starting this international program or project, will you explain why, when, and how you initiated the program or project? If you are not the person responsible for starting this international program or project, can you provide details as to why, when, and how the program or project was initiated, to the best of your knowledge, and how you became involved?

3. Would you categorize your international program or project as “service-learning” or in some other way? Please explain.

4. What were the primary driving external or internal forces for initiating this international program or project?

5. What are your professional and personal motivations for participating in this international program or project?

6. How was the relationship established between your physical therapist program/school and the international community partner?
   - Will you describe the formal and informal processes for establishing and maintaining the relationship?

7. How were the community needs identified?
   - Will you describe the formal or informal processes for needs assessment?

8. Did you have support from your institution to start this international program or project?
   - Will you describe the process for securing support?
   - Do you have ongoing support?

9. Did you have support from your program director to start this international program or project?
   - Will you describe the process for securing support?
   - Do you have ongoing support?

10. Did you have support from other faculty to start this international program or project?
    - Will you describe the process for securing support?
    - Do you have ongoing support?

11. What were the primary barriers within your institution or physical therapist program to initiating this international program or project?
    - What barriers continue to negatively influence the ongoing running of the international program or project?

12. What were the primary driving forces within your institution or physical therapist program in support of initiating this international program or project?
    - What driving forces support the continuance of the international program or project?

13. What are your goals and objectives for the international program or project?
    - How do you ensure that these goals and objectives are met?

14. How are students chosen to participate in this international program or project?
    - Why do you think students choose to participate?

(Continued)
Appendix.

15. Do students receive academic credit for participating?
   - Is this international program or project part of a course?

16. What activities are completed to prepare students to participate in this international program or project?

17. How is travel paid for the faculty and students?
   - Are there any fund-raising activities?

18. Who is responsible for travel arrangements?
   - Do students purchase travel insurance?
   - What are the emergency contingency plans?

19. Are students encouraged to or required to take leadership roles in before, during, or after the international travels?

20. Will you explain the process of getting faculty and students to and from the international site and for securing room and board at the site?

21. Will you explain what service activities faculty and students do while at the international site?

22. Do students participate in reflective activities? Please explain.

23. What barriers do you encounter to success in providing effective service to the community?
   - What support is in place to ensure that your service is effective?

24. How do you assess if community needs are met?

25. How do you evaluate the outcomes of the international program or project after you have returned from the international site?

26. Whether or not you have formally completed a program evaluation, what do you perceive are the most important outcomes of this international program or project?

27. Would you describe your international program or project as successful? Please explain why or why not.

28. Realistically, what could you do to improve your international program or project?
   - Ideally, what would you do to improve your international program or project?

29. Is there anything else about your international program or project that you would like to share with me?

30. Are you aware of other physical therapist program educators who are involved in international service-learning or other international volunteer service with their students who may be willing to be interviewed for this study?
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