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# A Needs Assessment and Program Evaluation of a Physical Therapy Service-Learning Program in China

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## ABSTRACT

International service-learning (ISL) programs in physical and occupational therapy programs are increasing in number. This paper describes a needs assessment and initial program evaluation conducted for a physical therapy ISL program at an orphanage in China. Chinese orphanage staff and Widener University physical therapy students were surveyed. Chinese staff expressed satisfaction with the training and provided suggestions for programming needs. Students identified areas for further education of orphanage staff and suggestions for future program design.

*Keywords:* international service learning, needs assessment, program evaluation, community engagement, physical therapy

## Introduction

In 2013, the Widener University Institute for Physical Therapy Education (IPTE) provided short-term instruction for staff at a Chinese orphanage that was a large, new facility with equipment supplied by a non-governmental organization. The orphanage received children with physical disabilities and developmental delays from many smaller orphanages and requested any information related to physical therapy (PT) training (Table 1). With the first trip in 2013, the emphasis of this initial instruction was placed on student delivery of culturally competent training and emphasis on basic physical therapy skills. In order for this program to continue in a meaningful manner for both the IPTE and the orphanage, it is suggested that the emphasis be placed on development of a reciprocal partnership with both orphanage staff and the IPTE.

The program must identify additional specific needs rather than providing general PT training in order to foster program sustainability (Pechak & Thompson, 2009).

## Background/Literature Review

International service-learning (ISL) programs as part of physical and occupational therapy programs are increasing in number (Pechak & Thompson, 2009b), often with an emphasis on children with disabilities (Pechak & Thompson, 2011). These experiences are commonly short in duration, with emphasis on development of student skills through engaging with underserved populations in developing countries (Pechak & Thompson, 2009b). Research on the essential components of ISL course planning has demonstrated that planning should focus on the four key areas of cultural competency; coordination and com-

Activity	Date
IPTE asked to provide initial general PT training in China.	October 2012
Initial PT training provided.	May 2013
IPTE asked to provide additional training related to child development and some PT diagnoses.	September 2014
Students developed training modules related to typical child development and common diagnoses seen in Chinese orphanages.	April 2015-July 2015
Second PT training trip occurred.	August 2015

munication with the priority population; comprehensive assessment; and strategic planning (Lattanzi & Pechak, 2011). The first essential component, cultural competency, is woven throughout the IPTE curriculum as part of the two-course series in Global Health (2 credits total), the six-part course series in Community Health (7 credits total) and the Teaching and Learning course (2 credits). The second and third elements could be addressed through conducting a needs assessment and program evaluation. Identification of the needs would provide a meaningful experience for both the students and the orphanage staff. Identification of the needs would also allow for adequate strategic planning to promote sustainability of this program. Ongoing program evaluation will allow the IPTE to refine and adapt programming to better meet the needs of the orphanage staff as determined by how effectively their needs are met.

Quality service-learning programs place equal emphasis on meeting the students' learning needs and fulfilling needs of community partners (Bringle & Hatcher, 2002). The first step to developing this reciprocal partnership is conducting a formal needs assessment. Needs assessments help to ensure reciprocity by making sure the service being performed is necessary and wanted and not just providing the student

learning opportunity (Busher, 2013). Another key element is monitoring the partnership from both the students' and partners' perspectives (Bringle & Hatcher, 2002). Continuous or formative program assessment aids in sustainability by both ensuring needs are being met and gathering data for program improvement (Plater, Bringle, Jones, & Clayton, 2009). Assessments of the community partner's perspective foster a mutually beneficial partnership and place both the students and the partner on equal footing (Busher, 2013).

While there is a lack of literature related to international service learning programs in China, the literature does describe the secondary needs of children living in Chinese orphanages. Chinese orphans are an underserved population in need of PT services. The number of children with disabilities and birth defects in China is increasing (Ren et al., 2011). Disability is one of the leading causes of child abandonment in China, due to the financial impact a family faces by attending to the health needs of a child with disabilities (Vanderklippe, 2014). Chinese orphans with and without disability also present with significant growth and motor delays as well as cognitive and language delays due to the impact of living in institutions (Miller & Hendrie, 2000).

PT can promote developmental tasks through training children in skills such as rolling and walking. PT can work to address other issues related to disability such as proper seating and positioning, providing properly fitting wheelchairs and walkers, and providing foot and ankle orthoses. While there is an increased need for PT services in Chinese orphanages, there is insufficient training of orphanage staff. Many orphanages are staffed exclusively by nannies, who may have limited formal education. If an orphanage has an employee titled a “physical therapist” on staff, it is likely that person has had no formal education in rehabilitation (Jones & Skinner, 2013; Liu, 2001). PT is a newer profession in China; entry-level physical therapy programs have only recently started to develop (Jones & Skinner, 2013). The China Rehabilitation Research Center was established only in the late 1980s to provide rehabilitation services for people with disabilities and provide training and resources to professionals who already have some training in rehabilitation services. However, these services have been primarily directed to hospitals in major cities (Liu, 2001).

The IPTE has formed a relationship with an orphanage in China through Widener University’s relationship with Chongqing Technology and Business University. The IPTE held a physical therapy training session for orphanage staff in May 2013 and was invited to provide further training in August 2015 (Table 1). Generally, the service needs for children living in Chinese orphanages are known; however, these provide an incomplete picture of the specific needs of our partner orphanage. In the interest of providing meaningful training to staff and to foster sustainability of this program, the three faculty members involved in preparing students and arranging the training sessions decided to conduct a primary needs assessment while providing the additional

requested on-site training at the orphanage. Additionally, the faculty members requested orphanage staff rate the training’s effectiveness.

The purpose of this study is 1) to describe the orphanage needs identified by both staff at an orphanage in China and the PT students involved in the training, and 2) to assess the effectiveness of the training in order to enhance future PT educational sessions.

## **METHODS**

### **Participants**

Participants were 10 graduate PT students providing PT education at an orphanage in China as part of a service-learning elective and 15 staff members at the orphanage who attended the training sessions. The Widener University Institutional Review Board approved this study prior to our August 2015 trip to China. All participants provided informed consent. Orphanage staff received informed consent forms in Chinese.

### **Trainings**

Trainings were held over three days. The trainings consisted of three half-day sessions of lecture and three half-day sessions of training staff on working with specific children receiving PT. Lecture content was provided via translated PowerPoint presentations. Lecture content consisted of information concerning the typical development of children and diagnosis-specific information on cerebral palsy, Down syndrome, medically complex cases including heart defects, cleft lip and palate, osteogenesis imperfecta, spina bifida, institutional autism, dwarfism, genetic disorders, and developmental delay. Students presented their content in English and simultaneous translation was provided by a Chongqing Technology and Business University Eng-

lish department faculty member. Hands-on training with the staff consisted of working with children who were receiving physical therapy services and consulting about various children who had issues remaining upright in their strollers and chairs. Faculty and students demonstrated different ways to progress the children to the next developmental task, proper seating and positioning, and safe stretching techniques.

**Instrumentation**

The authors developed five Likert-scale questions that assessed training effectiveness and three open-ended questions related to needs and program assessment; these questions were translated into simplified Chinese. The questions were developed based on areas of the program the authors wished to assess. A paid work-study student fluent in both Chinese and English translat-

ed the survey and all written comments from Chinese into English (Table 1). The Likert-scale questions were all worded in a positive way (Table 2), which in a Western-based research study would be considered potentially biasing. However, the questions were worded in this way so that we were more likely to receive a response that might add to our evaluation; the investigators were concerned that negatively worded questions would either be misunderstood or skipped due to the combination of translated surveys and the tendency for professional communication in China to be positive (Ann, 2003). Staff were also asked open-ended questions related to needs assessment and program evaluation: 1) What PT topics would be beneficial for your facility? 2) What activities were helpful? and 3) What could we do better next time? These open-

**Table 2. Frequencies and Percentages for Likert-Scale Items on the Staff Questionnaire**

Survey Item n=15	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
My knowledge of physical therapy methods has increased as a result of this training.	2	13.3	10	66.7	1	6.7	2	13.3	0	0.0
The students presented information that was of value to me.	2	13.3	10	66.7	2	13.3	1	6.7	0	0.0
The students behaved in a professional manner.	5	33.3	9	60.0	1	6.7	0	0.0	0	0.0
I am more confident in my ability to provide physical therapy to the children.	3	20.0	10	66.7	2	13.3	0	0.0	0	0.0
I have increased my understanding of developmental milestones.	3	20.0	9	60.0	2	13.3	1	6.7	0	0.0

ended questions were used to assess needs for the next PT training trip.

Students were asked open-ended questions to identify areas of staff knowledge deficit and what activities the students would change and why. These questions were: 1) What activities do you feel increased knowledge of orphanage staff? 2) What areas of knowledge deficit do you feel orphanage staff had before your training? 3) In which areas do you feel knowledge was increased? 4) Which activities did you feel were helpful for increasing knowledge? and 5) Which activities would you change and why? This final question was used to assess needs for the next PT training trip.

### Data Analysis

The Likert-scale staff survey questions were analyzed using SPSS version 20. Frequency count and percentages were calculated. Open-ended survey comments on both the staff and student surveys were assessed to identify the frequency of themes that emerged. Two researchers (KMP, SRP) who went to China as faculty for this service-learning course independently examined the surveys looking for themes and their frequencies. Those researchers met to confirm and discuss their findings as well as any discrepancies in frequency coding.

## RESULTS

Descriptive analysis of the Likert-scale survey responses found that the majority of orphanage staff either agreed or strongly agreed with each of the statements (Table 2).

Translated open-ended survey question responses yielded several common categories. (Table 3). Staff asked for additional training in the examination of and interven-

tions for a child with specific diagnoses such as autism or cerebral palsy.

Overall, 10 of the 15 staff responses commented on an appreciation of the live demonstrations and practice as well as the discussion of specific diagnoses-related cases. Related to this theme, staff wrote that overall they gained a greater understanding of PT techniques to address specific diagnoses and to facilitate developmental milestones. Staff identified three areas they hoped future training would address. Two staff members requested videos showing American physical therapists working with children, three staff members asked for more hands-on time for PT students to demonstrate evaluation and intervention with the children, and seven asked for more in-depth coverage of diagnoses.

Examination of the 10 Widener University visiting students' open-ended survey results yielded several key findings. Seven students felt that the presentations and hands-on time increased staff knowledge in developmental milestones, PT interventions for the children, and basic positioning. The students identified four key areas of training needed for staff. Two students identified body mechanics (i.e., proper body position and lifting techniques to prevent staff injury), five students identified advancing children through motor milestones, two students identified sensory integration techniques, and six identified seating and positioning as areas for further emphasis. Five students identified that having the presentations translated, video recorded in Chinese and then emailed ahead of time would allow staff to view the information prior to the PT training sessions. Eight students suggested having more hands-on time and structured lab activities would enhance the experience (Table 4).

<b>Table 3. Themes and Exemplars from Open-Ended Staff Survey Responses</b>	
Theme	Exemplar Quotes
Appreciation of the training	<p><i>"The live demonstrations and examples are helpful, especially the demonstrations on each part of the body."</i></p> <p><i>"...practical discussion of individual cases."</i></p> <p><i>"...the specific process and handling for special [needs] children."</i></p>
Understanding of physical therapy techniques	<p><i>"[I learned] systemic advanced rehabilitative concepts and methods."</i></p> <p><i>"It enhanced explanations of physiotherapy on these diseases: sequence of children's growth and development, Cerebral Palsy, Spina Bifida, and Osteogenesis Imperfecta."</i></p> <p><i>"[The topics of] CP (cerebral palsy), Down syndrome, acardia (heart defects), dysostosis (osteogenesis imperfecta), orofacial clefts and dwarfism are helpful."</i></p>
Identification of three areas for future training videos showing American physical therapists working with children	<p><i>"I wish there can be...videos about American therapists doing rehabilitation training with children. Therefore, we can learn and experience the American rehabilitation therapy skills."</i></p> <p><i>"Videos related to effectively treat disabled children...are helpful for my organization."</i></p>
More hands-on time with the children	<p><i>"It would be better if there could be more live demonstrations on intervention for children with abnormal growth..."</i></p> <p><i>"I hope to see the entire process of how a child is being evaluated and trained."</i></p> <p><i>"More physiotherapy to disabled children."</i></p>
In-depth information about diagnoses	<p><i>"...we could go deeper on some of the topics like...different disorders or disabilities."</i></p> <p><i>"I recommend to offer some more introduction and explanation of teaching and rehabilitating (sic)...processes and strategies. Also some referential cases..."</i></p> <p><i>"It would be perfect if the instructor provide us related pictures or personal clinical experience when explaining the concepts."</i></p>

## DISCUSSION

There is little known about the training of most orphanage staff functioning as physical therapists in Chinese orphanages, and thus the education needs of Chinese orphanage staff physical therapists is unknown (Jones & Skinner, 2013; Liu, 2001). This paper describes an attempt to discern education and training needs of staff in one Chinese orphanage. Other PT programs that desire to participate in ISL programs at Chinese orphanages should establish the training of the staff in advance in order to appropriately address the needs. An important step of this project was communicating that the IPTE and the orphanage staff can work together to address the educational and training needs of the staff and thus impact the health of the children (Liu, 2001; Lasker, 2016, p. 164). Asking orphanage staff what their future training needs are communicated our desire for a reciprocal partnership. Reciprocal partnerships such as this are critical to ensuring that the program is sustainable and that the service provided is a needed service. Another key area to promote sustainability is program evaluation. Ongoing evaluation ensures that the service provided was useful and permits future program refinement.

Evaluation of the effects of services delivered in ISL programs is not typical. In a recent systematic literature review of 67 papers on short-term medical service trips found that community partner outcomes from short-term medical service trips were not reported in the majority of articles (Sykes, 2014). This finding is consistent with the current PT and medical literature, which focuses more on volunteer/student outcomes, number of clients served, or anecdotal experiences (Foster & Pullen, 2016; Pechak, Gonzalez, Summers, & Capshaw, 2013; Wright & Lundy, 2012; Martiniuk et al., 2012; Sykes, 2014). Our study is the

first in the PT ISL literature that did not focus solely on student outcomes, but rather emphasized the importance of the community partner, in this case the orphanage staff. While communication, needs assessment, and program evaluation can be challenging in an ISL context, this study shows that it is feasible and can yield data that assists in planning future ISL trips. Community partner involvement is essential in creating ISL programs that are meaningful for both students and participants at an ISL host site.

The needs identified by the orphanage staff and our students provided a starting point for the next set of trainings in 2016. To address these identified needs, students created PowerPoint presentations related to sensory integration techniques, motivating children to advance through developmental milestones regardless of diagnosis, and seating and positioning. The students created a script to accompany the PowerPoint as well as a hands-on lab related to each content area. These presentations were translated into simplified Chinese characters and recorded in Mandarin Chinese using the scripts the students created. All translations and recordings were performed by the bilingual work-study. These were provided in advance of our third training session at the orphanage, which allowed for more hands-on demonstration that the staff requested.

Creating sustainable, community partnerships that meet the needs of a host country can be challenging. There is some consensus that short-term, service-learning programs like the present program are less meaningful than more long-term, ongoing projects (Lasker, 2016, p. 125). However, long-term projects can strain the resources of a program's time and money (Lasker, 2016, p. 145). To this end, ensuring that the programming is targeted to meet the needs of the orphanage and to provide skilled in-



<b>Table 4. Themes and Exemplar Quotes from Open-ended Student Survey Responses</b>	
Theme	Exemplar Quotes
Staff Knowledge Increases	<p><i>"I...feel they had an increase in hand skills from us demonstrating and working with the children."</i></p> <p><i>"Certain aspects of the student presentations that focused more on typical vs. atypical milestones as well as interventions really interested the staff and increased their knowledge."</i></p> <p><i>"Developmental milestones...additional activities to do with the kids that they didn't think the kids were capable of doing (different sitting postures)."</i></p>
Staff Knowledge Deficits to Address in Future Trainings	<p><i>"I felt the orphanage staff lacked knowledge on how to work towards and treat impairments each child had. They seemed to have a general idea but not specifics. I especially think they lacked knowledge on positioning and importance of mobility in and out of positions. This was evident in their wheelchair positioning."</i></p> <p><i>"In general (they) need to move and challenge the children continuously."</i></p> <p><i>"I feel like the orphanage staff did not push the children too hard and kept the kids at a comfortable stage....Most children needed a lot more walking and weight bearing and the staff wasn't aware."</i></p> <p><i>"Some staff displayed improper body mechanics when transferring the children... Positioning the children, stretching/strengthening exercises to prevent tone and immobility."</i></p> <p><i>"Positioning, 'use it or lose it' idea was lacking, understanding that to strengthen weak muscles you need to work them, in general need to move and challenge the children continuously, stimulating the children, diagnosis and examination."</i></p> <p><i>"they (should) allow children free time to explore environment and interact with one another."</i></p>
Ideas for Future Trainings	<p><i>"I would alter the lectures, to include more tasks and skills that can be used with the children. This information is more important in order for them to provide the care and skill needed for the children."</i></p> <p><i>"I would get rid of individual student presentations because it seemed like not all of the staff were interested in the actual medical definitions of each diagnosis, but were more intrigued by typical v atypical milestones and interventions. I felt the staff could benefit more with a hands on lab type setting, where we show them what things they can do to help the children. Maybe instead of presentations we can give them the information on brochures/pamphlets the students can make (in another class)... spending more time in front of the children with their caretakers would have been a better way to spend the time at (the orphanage)."</i></p> <p><i>"Provide a lab with presentations to demonstrate things like functional screens and other tests and measures so orphanage staff and Widener students can interact first without distraction. Send presentations to staff ahead of time to allow more time there for questions, demonstration, and treatment with the children."</i></p> <p><i>"I think it would be in both parties' best interest if we prerecorded the translated presentations. This way, the staff can study on their own time, and use it for review/reference. This would also make it easier for the translator to translate, since he/she wouldn't have to translate in real time. The presenter could then also prepare worksheets/case studies to go over with staff instead of lecturing."</i></p>

struction is vital. Capacity building in this way is one area that is necessary regardless of the length of service and that may compensate for short-term ISL programs. Training the orphanage staff to provide skilled service is one step toward capacity building (Lasker, 2016, p. 201). The trainings that took place in August 2015 were a starting point to provide information related to a range of diagnoses and some basic developmental skills. Providing additional training related to the needs assessment findings will promote further capacity building.

Another way to promote capacity building is the provision of materials that can be used as reference materials or to train new staff. The first step toward this is the recorded lecture materials. Staff also requested videos showing American physical therapists working with children. A source for video-recorded sessions of PT interventions with children with disabilities in the United States has been identified and is in the process of being adapted into a training resource, which is narrated in Chinese. While these future research plans are specific to our PT ISL program, any university program that engages in ISL can use these ideas. For example, if education students wished to provide training on specific educational methods used in the United States, videos depicting these methods and narrated in the language of the host country could serve as a lasting resource for the host site. These videos could be provided on a flash drive or put on a website that the host site could access. Similarly, if a social work program desired to provide information related to specific therapy techniques, prerecorded PowerPoint lectures in the host country's native language could be sent in advance to the host site, allowing for more time to practice therapy techniques. We plan to use these suggestions that came out of our program evaluation and assess their effectiveness in our 2016 training session.

The initial needs assessment and program evaluation provided guidance that will be essential to meeting the needs of the orphanage staff with respect to PT training. Limitations of this program included a lack of pre-/post-testing for staff knowledge. Pre-/post-testing was not performed, as the orphanage staff had identified these areas as knowledge deficits prior to our program. Additionally, the time constraint of providing 10 educational lectures and hands-on physical therapy evaluation and treatment sessions of children did not lend itself to also including pre-/post-testing. Students were asked to identify areas where they felt staff had improved in knowledge based upon their lectures and observation of hands-on skill development in the orphanage staff. Students and the faculty observed hands-on skill development throughout the training sessions. For example, the orphanage staff initially demonstrated reluctance to progress children from positions on their backs to seated positions or to stretch the arms and legs of children with diagnoses like cerebral palsy. All orphanage staff performed these skills by the end of the training sessions. We believe there is validity in the students' assessment of orphanage staff knowledge acquisition for this reason. Future trainings, however, should assess staff knowledge prior to and after hands-on laboratory training through a combination of written and observational assessment.

An additional limitation is that we do not know the long-term effects of the PT training program. We do not know at this time if our trainings changed the behavior and practices of the orphanage staff as it relates to PT. Future research for an ISL program should also evaluate outcomes to determine the long-term effectiveness of the ISL program. This allows for either program refinement as well as an examination as to whether the program should continue to be implemented.

## CONCLUSIONS

This study was undertaken in an attempt to implement the essential components of an ISL program described by Lattanzi and Pechak (2011). This paper is the first in the PT ISL literature to describe a needs assessment and initial program evaluation that included a focus on the community partner, rather than solely on student needs and outcomes. Community partner involvement is a necessity in order to promote sustainable ISL programs.

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