



January 2014

Pilot Interprofessional Education Program for OT Student Pediatric Practice Readiness

Michelle A. Suarez

Western Michigan University - USA, michelle.a.suarez@wmich.edu

Heather K. Koole

Calvin College - USA, hkk3@calvin.edu

Jerrold Jackson

Dallas Independent School District - USA, jerroldjjackson@gmail.com

Follow this and additional works at: <https://scholarworks.wmich.edu/ojot>



Part of the Occupational Therapy Commons

Recommended Citation

Suarez, M. A., Koole, H. K., & Jackson, J. (2014). Pilot Interprofessional Education Program for OT Student Pediatric Practice Readiness. *The Open Journal of Occupational Therapy*, 2(1). <https://doi.org/10.15453/2168-6408.1068>

This document has been accepted for inclusion in The Open Journal of Occupational Therapy by the editors. Free, open access is provided by ScholarWorks at WMU. For more information, please contact wmu-scholarworks@wmich.edu.

Pilot Interprofessional Education Program for OT Student Pediatric Practice Readiness

Abstract

This mixed methods pilot study investigated the impact of an interprofessional education program on OT student readiness for collaboration with SLP students in a pediatric teaching-clinic practice setting. OT students were randomly assigned to either the treatment group, which received the interprofessional education experience, or the control group, which received the typical educational experience. Students completed pre and post surveys and journaled about the experience. Results pointed to a ceiling effect in the measurement scales in both the treatment and control groups due to positive attitudes at baseline. This positivity was also reflected in journal entries for the treatment group students. Several insights were gained through data analysis about the feasibility of this type of program, the usefulness of available measuring tools for detecting change in small samples, and the developmental progression of interprofessional skills attainment.

Comments

Declaration on interest

This project was funded by a doctoral student research grant from the Blue Cross Blue Shield Foundation of Michigan.

Keywords

Occupational therapy, interprofessional education, pediatric practice

Cover Page Footnote

Acknowledgments I would like to thank the Blue Cross Blue Shield foundation of Michigan for the doctoral student research award that supported this project. I also want to thank the students who participated in the Interprofessional Education Program and Dr. Nickola Nelson for her mentorship and support.

Credentials Display

Michelle A. Suarez, Ph.D., OTR/L; Heather K. Koole, MA, CCC-SLP; Jerrold Jackson, M.A., CCC-SLP

Copyright transfer agreements are not obtained by The Open Journal of Occupational Therapy (OJOT). Reprint permission for this Topics in Education should be obtained from the corresponding author(s). Click here to view our open access statement regarding user rights and distribution of this Topics in Education.

DOI: 10.15453/2168-6408.1068

Interprofessional collaboration among allied health professionals is essential in the provision of holistic, early intervention pediatric practice for best patient outcomes (James & Chard, 2010).

However, there is evidence that teaming skills are not intuitive and that learning to work together does not always occur on the job (Barnsteiner, Disch, Hall, Mayer, & Moore, 2007). The preprofessional period provides an opportunity to institute interprofessional education to facilitate the development of collaboration skills (Barnsteiner et al., 2007). Unfortunately, most health care education is highly segregated (Carlisle, Cooper, & Watkins, 2004). There is a need for interprofessional education programs that teach allied health students who are preparing to work in pediatric practice the skills required to collaborate with other professions in order to meet the complex needs of this population.

Providing high-quality treatment in the current, complex health care environment requires the ability to collaborate with other professionals. A research synthesis conducted by the Institute of Medicine (2003) has illustrated that when health care workers understand the roles, language, and values of other professionals, they are able to work together more effectively to ensure high-quality care. Interprofessional collaboration is especially important in the provision of holistic, early intervention pediatric practice. A lack of continuity of care can threaten optimal service provision for the early childhood population. For example, in a

study of the parental experience with early intervention services, parents highlighted the negative impact that a lack of cooperation among professionals had on their service delivery experience (James & Chard, 2010). The parents felt that there was meaningful collaboration between themselves and the individual professionals but that this was lacking among the service providers. Furthermore, deficient collaboration among early intervention professions can drain the time of a family that is already experiencing the stress of caring for a child with special needs (Brotherson & Goldstein, 1992).

Occupational therapists play a key role in providing services for young children with special needs. Teaching occupational therapy (OT) students to work with other professionals before they graduate will lead to their working together effectively in a changing and challenging health care environment (Parsell and Bligh, 1998). However, even when OT and other allied health students are learning similar content, they typically do so without any interactions that cross professional boundaries (Carlisle et al., 2004). Despite the fact that health care educational programs exist in close spatial proximity and offer services to the same population of clients, collaboration is rare. For example, at Western Michigan University, where this study took place, OT and Speech Language Pathology (SLP) students were often offering services to the same clients in the same treatment rooms at different times with

minimal to no interaction among the treatment providers. This can lead to misunderstandings, the devaluation of others' contributions, and professional protectionism. Education that involves going beyond the confines of one's own discipline to develop teamwork, collaboration, and clinical reasoning skills in the context of an interprofessional team is an essential foundation for practice after graduation (Barnsteiner et al., 2007).

There are several difficulties in developing interprofessional education programs. These challenges include organizational barriers to implementation, such as incongruent class schedules and curriculums among disciplines, the lack of shared meeting space, and financial disincentives (Price et al., 2009; Rees & Johnson, 2007). For example, Price et al. (2009) identified "logistic enablers," such as the physical layout of the clinic, the electronic medical records communication system, and the support from leadership for increased time allotted for collaboration, as key elements of a successful interprofessional education program.

Organizational determinants, including specified time and space for collaboration and fee structures that make collaboration financially feasible, are necessary for successful interprofessional work (Price et al., 2009; Rees & Johnson, 2007).

In addition, two other barriers to implementation of interprofessional education programs exist. First, there are currently no gold standard measuring tools to capture changes in

interprofessional skills after engagement in an interprofessional education program (Thannhauser, Russell-Mayhew, & Scott, 2010). Second, there is a limited understanding of both the elements that make an interprofessional education program effective and the developmental progression of interprofessional skills attainment (Barr & Ross, 2006).

There is a lack of well-developed tools for measuring outcomes of interprofessional education. In a systematic review of the literature of interprofessional education outcome measures, Thannhauser, Russell-Mayhew, and Scott (2010) concluded that little information exists about the psychometric properties of published instruments, and that none have been used in existing studies more than two times. Also, a major concern about the available instruments is the lack of validity information. This literature review singled out two instruments that have promise for measuring outcomes of interprofessional education: The Interdisciplinary Education Perception Scale (IEPS) and the Readiness for Interpersonal Learning Scale (RIPLS). There is a need to further evaluate these and other existing instruments to determine gold standard measuring tools for interprofessional learning outcomes.

The ability of interprofessional education programs to increase collaboration readiness has been assumed, but research evidence is still in development (Barr & Ross, 2006). One longitudinal study by Pollard, Miers, and Gilchrist

(2004) evaluated interprofessional skills and perceptions after a large-scale overhaul of the curriculum for 10 allied health profession programs. This curriculum included an interprofessional module in each year of the study. The researchers used a quantitative questionnaire to collect baseline data from 643 students before they began the core curriculum. The main findings were that students were positive about their own communication and team-working skills, as well as about interprofessional learning; however, most of the students did not have favorable perceptions of actual interprofessional interaction. Also, findings during the interim and graduation measurements were different from what the researchers hypothesized. These findings indicated that student perceptions of interprofessional collaboration readiness decreased initially and then stabilized (Pollard, Miers, Gilchrist, & Sayers, 2006; Pollard et al., 2004).

The Pollard et al. (2004) longitudinal study may provide some insight into a developmental progression of interprofessional collaboration skills. The perception of interprofessional skills and attitudes may be positively inflated initially, before the students have the opportunity to test their own skills in the curriculum. Then, the students may experience a “reality check” when actual performance is required. Over time, confidence may build, thus returning scores to a realistic level. When the students in the Pollard et al. study who had experienced the interprofessional curriculum

graduated, researchers were able to compare their scores to the scores of students who had graduated previously. The researchers found that the interprofessional curriculum had an overall positive effect on the students’ attitudes toward their own professional relationships. The work of Pollard et al. gives us some insight into the developmental progression of interprofessional knowledge and attitudes, but there is still much to be learned.

The pilot interprofessional education program in this current study aimed to meet these challenges by addressing three specific goals: (a) to investigate the feasibility of the implementation of an interprofessional educational experience in an early OT internship for master’s level OT students in a typically segregated, university-run teaching clinic setting, (b) to determine whether three published scales developed to measure interprofessional attitudes (i.e., the IEPS, the RIPLS, and the Role Perception Questionnaire [RPQ]) were appropriate for detecting changes in interprofessional attitudes and readiness with this population of students, and (c) to explore the developmental progression of interprofessional skills through an examination of interprofessional scales pre-post interprofessional experience and through the themes developed in the students’ reflection journals. The information obtained from this pilot study could be a catalyst for the development of a larger scale program.

Method

This was a pilot, mixed method study that examined the impact of an interprofessional education experience on OT students' readiness for and perceptions of interprofessional collaboration. Data included quantitative and qualitative elements. The OT participants, who were entering their level I placement at the university-run clinic, were randomly assigned to the treatment group (participated in the interprofessional education experience) or the control group (participated in the typical internship experience). The typical internship experience took place at the university-run, discipline-specific clinic in which there are no opportunities for interprofessional collaboration. The participants in both the treatment group and the control group were asked to complete an electronic survey designed to measure interprofessional readiness and collaboration skills at the beginning and end of the semester. In addition, the OT participants in the treatment group completed journals as part of the fieldwork experience. Journaling included reflection after completing interprofessional modules and after the interprofessional evaluation experience. The journals provided the researchers with insight into the experience of interprofessional education from the perspectives of the individuals who shared this experience. The researchers obtained human subjects review board approval before the study began, and the participants signed an informed consent document.

Interprofessional Education Experience

The interprofessional education experience for this pilot study was presented within the context of an OT level I fieldwork at the university teaching clinic. Several interprofessional modules were presented at the student clinic orientation sessions. The curriculum was led by the study's authors: One OT professor and two SLP professors with over 30 years combined pediatric clinical experience and over 10 years combined teaching experience. Students in the OT program paired with students in the SLP program to complete these modules:

- Getting to know you—student introductions and presentation of own profession. The interprofessional experience began with an icebreaker activity to allow the students to start to connect on a personal level. Then, in small OT-SLP groups, the students presented the overarching philosophy and scope of practice of their respective profession. The students were instructed to explore the similarities and differences between the two professions.
- Understanding the role of SLPs and OTs in pediatric practice. In this module, the students were instructed to discuss their profession's role in several pediatric settings, including outpatient practice. They identified common overarching functional client goals that might be included in a treatment plan and

how each profession would contribute to the achievement of these goals.

- Pediatric development from two different perspectives.

The next three modules focused on a pediatric case study that included OT and SLP service provision. The student OT-SLP pairs were given a client name with an age and diagnosis. They were asked to discuss the developmental milestones expected for this particular age. The OT students described typical motor and sensory development, the SLP students discussed the development of communication skills, and both students in the pairs discussed what they would expect to see in social interaction. Then, they were asked to describe, from their professional perspectives, how they would frame the specified diagnosis (autism, in this case). They were asked what the expected deficit areas would be and how they would measure whether these deficits were present in this particular case.

- Integration of theory with practice; exploration of what we have in common and our unique contributions.

In this module, the student OT-SLP pairs were given an evaluation report from the other profession. They were instructed to highlight terms that they did not understand, identify an evaluation focus that was the

same as it would be for their profession, and recognize aspects that were different. After individual readings of these documents, the students paired with their other profession partners to discuss unfamiliar terms and the focus of the assessments, as well as to brainstorm ways that information contained in the other profession's report would better inform their own treatment plan.

- Teachers as role models; interprofessional collaboration examples in the field. This module concluded the didactic instruction for this pilot program. The OT and SLP instructors described a case in which interprofessional collaboration was successful. The students were asked to identify the elements that made this collaboration a success and how this collaboration may have impacted the client's care.

After the completion of the modules, the OT-SLP teams completed a comprehensive developmental evaluation of a pediatric client who was referred to the clinic for this purpose. The evaluation process included joint planning, meeting with the family, assessing the child, and completing documentation as an OT-SLP team. The OT students reflected on the team experience by composing journal entries.

Instrumentation

The Interprofessional Experience Survey included 41 questions that were designed to collect the following information:

- Demographic information (N = 4)
- Interdisciplinary Education Perception Scale (IEPS) (McFadyen, Webster, & Maclaren, 2006) (N = 18). This Likert scale was designed to measure attitudinal changes pre and post interprofessional education. It was originally developed by Luecht, Madsen, Taugher, and Petterson (1990), and tested on 143 administrators and graduate students. Later, McFadyen et al. (2006) suggested a revised version of this instrument based on reliability data from 247 students. The revised version was used in this study.
- Readiness for Interprofessional Learning Scale (RIPLS) (Parsell & Bligh, 1999) (N = 19). The RIPLS measures students' readiness for learning information and skills related to interprofessional development (McFadyen et al., 2005).
- Role Perception Questionnaire (RPQ) (Mackay, 2004). The RPQ was designed to be a generic measure of health care professionals' perceptions of their own roles and those of others in different fields. In 31 bi-polar questions, participants are asked to discriminate on a scale from 1-10, where their opinion falls between the opposite constructs. According to the developers of

this questionnaire, there is no "right answer." Therefore, a summary score was not tabulated for the current study. Instead, items were analyzed individually to track changes in the participant's attitudes throughout the study. Also, prior to data analysis, the interprofessional educators/researchers each independently marked toward which opposite pole the students' ratings would drift after the interprofessional education experience on each item (↓↑). Items that were judged to be neutral were marked as such (↔). Then, these determinations of direction were compared and any differences were discussed until consensus was reached. For example, on the item that asks: "My profession works effectively within a team (1..2..3..4..5..6..7..8..9..10) My profession works more effectively alone," the consensus was that after the interprofessional learning experience the students' ratings would drift toward the team (↓). The item that states: "My profession demonstrates a sense of humor 1..2..3..4..5..6..7..8..9..10 My profession displays a serious attitude" was marked by the interprofessional educators as neutral (↔).

The researchers gathered qualitative information from the journals that the students in

the treatment group completed as part of their internship experience.

Analysis

Participant survey data were entered into SPSS, and descriptive statistics and graphic displays were used first to explore the data. Repeated measures ANOVA was used to look at pre-post changes for the treatment and control groups on the IEPS, the RIPLS, and the RPQ. Fisher's Exact Test (used due to cell sizes with fewer than 5) was used to determine if scores on the RPQ moved toward the pole in the direction the educator expected.

Qualitative data was explored using a phenomenological approach to data analysis recommended by Moustakas (1994).

Phenomenological analysis was chosen in order to gain insight into the students' perceptions of their interprofessional experience that could be used to explore implementation of a larger scale interprofessional program later. In the qualitative analysis, each journal statement was evaluated for relevance to understanding the student's perception of the interprofessional experience. Statements identified by the researchers as relevant were then clustered into themes and the relationship among the themes was explored. Verbatim examples were chosen to create a deep description of the interprofessional experience for the student participants.

Results

Demographic Information

All of the participants were enrolled in the OT master's program. There were seven female students and one male student in the treatment group, and there were six female students and one male student in the control group. The mean age of the participants in the treatment group was 26.1 years ($SD = 3$ years) and the mean age of the participants in the control group was 34.3 years ($SD = 13.8$ years).

IEPS and RIPLS

Means and standard deviations for the IEPS and the RIPLS are reported in Table 1. Using mixed, repeated measures ANOVA, there were no differences in the pre to post-test scores for the treatment and control groups on either of these interprofessional measures. On this survey, an IEPS score of 1 indicated strong agreement with items regarding positive interprofessional perception and a score of 6 indicated strong disagreement. On the RIPLS, a score of 1 also indicated a strong agreement with items related to positive interprofessional development, and a score of 5 indicated strong disagreement.

RPQ

Items on the RPQ were evaluated individually to determine if there were significant differences between pre and post-test for the treatment and control groups. Results of mixed, repeated measures ANOVAs are reported in Table 2.

Table 1
Means and Standard Deviations of Pre-post Test Scores for Treatment and Control Groups on Interprofessional Perception and Readiness Measures

Group	IEPS				RIPLS			
	$F(1, 13) = .22, p = .65$				$F(1, 13) = .12, p = .73$			
	Pre		Post		Pre		Post	
	X	SD	X	SD	X	SD	X	SD
Treatment	1.9	.3	1.6	.3	1.4	.2	1.5	.4
Control	1.8	.4	1.8	.4	1.4	.3	1.4	.2

Table 2
Means and Standard Deviations for Treatment and Control Groups on the Role Perceptions Questionnaire and Direction of Expected Shift, Direction of Actual Shift for Treatment Group

Direction of shift for tx group		Item Description	Treatment		Control	
Expect	Actual		Pre	Post	Pre	Post
		My profession... 1.....10	X (SD)	X (SD)	X (SD)	X (SD)
↑	↓	1. Little collaboration...considerable collaboration	9.1(1.0)	9.0(1.1)	9.0(.8)	8.9(.7)
↔	↓	2. Medical focus...social focus	5.3(1.5)	4.8 (.7)	5.4(1)	5.6(1.6)
↓	↑	3. Holistic view...only own practice related problem	1.4 (.7)	1.8(1.2)	2.3(1.5)	1.9(1.5)
↓	↑	4. Deep relationship with patient...superficial*	1.5 (.5)	1.9 (.8)	2.4(1.1)	2.0(.8)
↓	↑	5. Communicates with many other professionals...few	1.5 (.5)	1.6 (.7)	1.9 (.7)	1.9 (.4)
↔	↑	6. Works autonomously...supervised	3.6(2.5)	4.0(1.6)	4.7(1.7)	4.0(1.7)
↔	↓	7. Objective medical perspective...subjective social	5.6(1.5)	4.8(1.6)	4.6(1.4)	4.6(1.4)
↑	↓	8. Good interpersonal skills with individual...with group	4.3(1.5)	4.1 (.8)	3.9(1.5)	4.6 (.8)
↓	↑	9. Works effectively within a team....Alone	2.3(1.5)	2.9(1.6)	3.0(1.7)	2.7 (.5)
↔	↑	10. Able to deal with wide variety of patients...narrow	1.0 (.0)	1.5 (.8)	1.1 (.4)	1.4 (.8)
↑	↓	11. Tends to works in isolation...works in a team*	8.1(1.9)	7.4(1.9)	7.7(1.5)	8.4(1.0)
↔	↑	12. Health education role...unrelated to health education*	1.1 (.4)	1.9(1.0)	2.3 (.8)	2.0 (.8)
↔	↑	13. High degree of technical skill...intellectual skill	4.5 (.9)	5.9(1.0)	4.7(2.1)	5.0 (.6)
↓	↔	14. Patient's general well-being...only in relation to specific professional context	1.5 (.8)	1.5(1.1)	2.1(1.5)	1.6 (.8)
↔	↓	15. High degree of involvement with patient... low	1.8(1.0)	1.6 (.0)	2.0(1.5)	1.9(1.1)
↔	↓	16. Demonstrates sense of humor...serious attitude	5.3(1.7)	4.8(1.5)	5.1(1.5)	4.0(2.0)
↔	↔	17. Caring role and people skills...technical role	3.0(1.2)	3.0(1.5)	2.6(1.0)	2.4(1.1)
↓	↓	18. Role is clear...profession holds mystique	6.1(2.4)	5.8(1.7)	4.9(2.9)	5.1(2.1)
↓	↑	19. High degree of professionalism...does not consider professional image	1.9(1.2)	2.3(1.3)	1.5 (.8)	2.1 (.9)
↑	↓	20. High opinion of our own profession...values our and other professions	6.3(3.7)	5.0(2.8)	6.4(2.2)	6.6(3.3)
↔	↓	21. Ability to refer...works within own field	2.5(1.7)	2.3(1.7)	3.7(2.6)	3.0(1.3)

Note. One Tailed Significant Change in Score for Treatment group compared to control indicated with asterisk.

Items 4 ($F = 4.13, p = .03$), 11 ($F = 6.97, p = .01$), and 12 ($F = 76, p = .02$) changed significantly from pre to posttest for the treatment group when compared to the control group. Also, 9/10 items that the educators/researchers expected to drift toward one pole after participation in the interprofessional education program actually drifted toward the opposite pole. There was a significant difference between the direction of change that was expected and the actual direction of change for the students in the treatment group (Fisher's Exact Test: $p = .004$).

Qualitative Journal

Overall, statements regarding the strengths of the interprofessional experience and the contrasting challenges were common in the student journals. From these statements, themes developed. First, the students were positive about the interprofessional learning experience. They consistently identified the growth of their own professional identity as an OT as a benefit of the interprofessional learning experience. ($n = 7/8$)

- “One of the most beneficial aspects of the collaboration activity with the SLP student was having the opportunity to ask and be asked ‘what and why’ of each discipline.”
- “Collaborating with another professional forced me to advocate for the OT profession.”
- “Throughout the process, I gained great insight into the working dynamics of a collaborative partnership, which allowed me

to grow within my own profession and will have a great impact on my future.”

It was somewhat surprising that there was little mention in the journals of learning about the SLP profession. The students did not focus on what they learned about SLPs but instead on what they learned about themselves and their own profession through their interaction with the other profession.

The students also consistently identified the need for more time with the SLP students as a challenge of the interprofessional experience. ($n = 8/8$)

- “I wish we could have spent more time focusing on this throughout the semester and I hope to be exposed to more here in my time at WMU.”

Discussion

One focus of this pilot study was to determine if interprofessional education was feasible in a university clinic setting. This included consideration of the organizational determinants of successful interprofessional education discovered through educator/researcher reflection. Another focus was to determine the appropriateness of some existing “off the shelf” measures for detecting meaningful change in a small group of participants. In addition, the effect of the interprofessional education program on the attitudes and readiness of the OT students was measured and compared to the controls.

Currently, there is no standardized instrument that measures organizational

determinants of successful interprofessional collaboration (San Martin-Rodriguez, Beaulieu, D'Amour, & Ferrada-Videla, 2005). Through the interprofessional education process and after data collection, the educators/researchers reflected on these factors to identify facilitators and barriers in this study and to consider the feasibility of interprofessional education in this typically segregated, university teaching-clinic environment. First, interprofessional education is a key priority within this particular university's strategic goals. This allowed for administrative support to overcome barriers to make this project work. However, many organizational barriers existed. First, the billing structure for this clinic setting was not set up to accommodate interprofessional work. Both disciplines agreed to take a reduced fee for this project, but this may not be acceptable as a long-term solution. Second, the students' class schedules were rigid, and finding time to work together was a challenge. The interprofessional modules and evaluations were squeezed into available times that were less than optimal for educators, students, and clients. Finally, due to current assignment procedures, it was not possible to randomly assign the SLP students to a treatment and control group; as a result, this study considers changes in the OT students' interprofessional attitudes and readiness only. In order for interprofessional education to be a feasible and sustainable part of clinical education, faculty and administration must collaborate at the curriculum

development level to allow for smooth and systematic inclusion of this type of education in clinical internships. Issues such as billing, assignment to clinical placements, and class schedules must be aligned to enable successful interprofessional collaboration between disciplines. In future studies, systematic measurement of organizational determinants for the success of interprofessional education is warranted. Consideration of the less formal information gathered through educator reflection in this study and future studies that provide systematic measurement may be useful in the development of successful interprofessional learning programs.

This study evaluated several instruments for measuring interprofessional attitudes and readiness to determine their appropriateness for measuring meaningful change in a small-scale project and actual change in participant outcomes. The results indicated that these instruments may not be ideal for detecting change with a small sample size. It is possible that a ceiling effect on the IEPS and the RIPLS made it hard to see any changes in interprofessional attitudes and readiness. Also, many of the RPQ items did not intuitively make sense in the context of interprofessional outcomes measurement (e.g., my profession has a sense of humor...). In total, this information fits with the literature that highlights the need for further examination of the validity and reliability of available interprofessional instruments, and the

possible development of new, meaningful instruments sensitive enough to measure change.

The researchers gathered qualitative information through the identification of themes in the student journals. Overall, the students in the OT treatment group were positive in their perceptions of this interprofessional experience. Consistently, the students identified that the main benefit of the program was their development of a greater identification with and an understanding of their own profession. The students also expressed the hope that they would receive more interprofessional interaction as they continued in the master's program.

Despite this positivity, the direction of endorsement of items on the RPQ was the opposite of what the educators hypothesized would indicate greater interprofessional readiness. For example, the educators expected that the students' scores on the RPQ would shift toward an endorsement of health care professionals working as a team. Instead, scores shifted significantly toward an endorsement of health care professionals working more in isolation. The studies by Pollard et al. (2004, 2006) may shed some light on this unforeseen development. In this large-scale study, before any real world interprofessional interaction, students were positive in their perception of their own interprofessional skills and their interprofessional attitudes. After some interprofessional experience, this confidence declined before stabilizing at graduation. The

results from the current pilot study combined with the literature may illustrate a possible developmental progression of interprofessional skills. Students start out positive about their own interprofessional readiness. However, after experiencing the reality and challenges inherent in actual interprofessional collaboration, they may retreat behind their own scope of practice. Then, after they fully establish their own professional identity, they are able to look outside of their own profession for an understanding of how others integrate into the bigger health care picture. This theory fits with the information obtained in the qualitative journals. The students spoke of the value of this interprofessional education program in terms of a greater understanding of and identification with the OT profession and less about gaining an understanding of their interprofessional team member.

This study has several strengths. A considerable strength is that this interprofessional education program was interwoven into an existing, typically segregated clinical internship experience. Through identification of the logistical facilitators and barriers, other programs may take advantage of this information for planning interprofessional education programs. Another strength was the random assignment of the OT students to the treatment and control groups. This pilot program identified some challenges with existing outcome instruments that may provide a catalyst for future study. Finally, the results of this study provide a

possible theoretical course for the development of interprofessional readiness. However, due to the small sample size and the small shifts on the RPQ, this interpretation should be viewed with caution.

There are also some limitations to consider. This pilot project contained a very small sample and this may have limited the ability to detect change on the IEPS and the RIPLS. The feasibility of the program was considered through informal reflection from interprofessional educators, and there is a need to collect this information in a more systematic fashion. Finally, the study analyzed outcome data for the OT students only. It is important to consider the interprofessional attitudes and readiness of all health care students in order to ease the transition from course work to clinical work in teams.

In conclusion, this pilot study provided information about the feasibility of interprofessional

work in a university clinic, some of the challenges of measuring change in small samples of students, and possible insight into the course of interprofessional skill development. However, this area of study warrants more work. Research that looks at organizational determinants of successful interprofessional education and how to measure these constructs would be important for integrating interprofessional education into allied health curriculums. It is necessary to continue the development of outcome measures that are valid, reliable, and sensitive to change. Finally, learning more about how health care students internalize interprofessional skills would assist with the development of more effective interprofessional education curriculums.

References

- Barnsteiner, J. H., Disch, J. M., Hall, L., Mayer, D., & Moore, S. M. (2007). Promoting interprofessional education. *Nursing Outlook*, 55(3), 144-150.
- Barr, H., & Ross, F. (2006). Mainstreaming interprofessional education in the United Kingdom: A position paper. *Journal of Interprofessional care*, 20(2), 96-104.
- Brotherson, M. J., & Goldstein, B. L. (1992). Time as a resource and constraint for parents of young children with disabilities: Implications for early intervention services. *Topics in Early Childhood Special Education*, 12(4), 508-527.
- Carlisle, C., Cooper, H., & Watkins, C. (2004). "Do none of you talk to each other?" The challenges facing the implementation of interprofessional education. *Medical Teacher*, 26(6), 545-552.
- Institute of Medicine. (2003). *Health Professions Education: A Bridge to Quality*. Washington, DC: National Academies Press, 2003.
- James, C., & Chard, G. (2010). A qualitative study of parental experiences of participation and partnership in an early intervention service. *Infants & Young Children*, 23(4), 275-285.
- Luecht, R. M., Madsen, M. K., Taugher, M. P., & Petterson, B. J. (1990). Assessing professional perceptions: Design and validation of an interdisciplinary education perception scale. *Journal of Allied Health*, 19(2), 181-191.
- Mackay, S. (2004). The role perception questionnaire (RPQ): A tool for assessing undergraduate students' perceptions of the role of other professions. *Journal of Interprofessional Care*, 18(3), 289-302.
- McFadyen, A., Webster, V., & Maclaren, W. (2006). The test-retest reliability of a revised version of the Readiness for Interprofessional Learning Scale (RIPLS). *Journal of Interprofessional Care*, 20(6), 633-639.
- McFadyen, A., Webster, V., Strachan, K., Figgins, E., Brown, H., & McKechnie, J. (2005). The readiness for interprofessional learning scale: A possible more stable sub-scale model for the original version of RIPLS. *Journal of Interprofessional Care*, 19(6), 595-603.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.
- Parsell, G., & Bligh, J. (1998). Educational principles underpinning successful shared learning. *Medical Teacher*, 20(6), 522-529.
- Parsell, G., & Bligh, J. (1999). The development of a questionnaire to assess the readiness of

- health care students for interprofessional learning (RIPLS). *Medical Education*, 33(2), 95-100.
- Pollard, K. C., Miers, M., & Gilchrist, M. (2004). Collaborative learning for collaborative working? Initial findings from a longitudinal study of health and social care students. *Health and Social Care in the Community*, 12(4), 346-358.
- Pollard, K. C., Miers, M., Gilchrist, M., & Sayers, A. (2006). A comparison of interprofessional perceptions and working relationships among health and social care students: The results of a 3-year intervention. *Health and Social Care in the Community*, 14(6), 541-552.
- Price, D., Howard, M., Hiltz, L., Dolovich, L., McCarthy, L., Walsh, A. E., & Dykeman, L. (2009). Interprofessional education in academic family medicine teaching units: A functional program and culture. *Canadian Family Physician*, 55(9), 901-901.e5.
- Rees, D., & Johnson, R. (2007). All together now? Staff views and experiences of a pre-qualifying interprofessional curriculum. *Journal of Interprofessional Care*, 21(5), 543-555.
- San Martin-Rodriguez, L., Beaulieu, M., D'Amour, D., & Ferrada-Videla, M. (2005). The determinants of successful collaboration: A review of theoretical and empirical students. *Journal of Interprofessional Care*, 19(1), 132-147.
- Thannhauser, J., Russell-Mayhew, S., & Scott, C. (2010). Measures of interpersonal education and collaboration. *Journal of Interprofessional Care*, 24(4), 336-349.