Fall 12-30-2016

Interprofessional Collaboration with Aphasic Patients: A Survey Based Study on Implementation and Benefits

Emily Foster
Illinois State University

Alexa Wagner
Illinois State University

INTERPROFESSIONAL EDUCATION INVOLVING DYSPHAGIA:

A SURVEY BASED STUDY ON IMPLEMENTATION AND BENEFITS

Emily Foster and Alexa Wagner

An Independent Study Submitted in Partial Fulfillment of the Requirement for the Degree of
MASTERS OF SCIENCE

Department of Communication Sciences & Disorders
ILLINOIS STATE UNIVERSITY
Fall 2016

_____	_____
Student's Signature	Date
_____	_____
Student's Signature	Date
_____	_____
Director's Signature	Date
_____	_____
Second Reader's Signature	Date

Introduction

Interprofessional practice (IPP), collaboration of professionals from different backgrounds working together to provide services, is of growing importance in speech-language pathology and across other disciplines in the vast health field (WHO, 2010). The American Speech and Hearing Association (ASHA) stresses the importance of communicating roles and responsibilities of health professionals to provide the best quality care for patients (Dixon & Oandasan, 2015). In order to understand the roles and responsibilities across disciplines, health care professionals and students need to be provided with the necessary education. Currently, an initiative for interprofessional competency is being constructed to provide more involved education for the healthcare field (Interprofessional Education Collaborative Expert Panel, 2011). The World Health Organization (WHO) defines this as interprofessional education (IPE): 'when two or more health professionals learn about, from and with each other to enable effective collaboration and improve health outcomes' (WHO, 2010, p. 10). The purpose of IPE is to make studying health care professionals knowledgeable of and prepared for collaboration with other professionals during practice.

While the WHO definition of IPE applies to healthcare professions as a whole, ASHA has adopted and applied this definition specifically to speech-language pathology and audiology. A specific population that speech language pathologists (SLP) assess and treat especially involved in the multidisciplinary approach is individuals with dysphagia, a feeding and swallowing disorder. The current study is interested in investigating IPE as it specifically relates to evaluation and treatment of dysphagia.

Interprofessional Practice and Interprofessional Education Models

Research shows that best practice includes a holistic approach to patient care, as represented in the WHO's patient-centered model, the International Classification of Functioning (ICF). The ICF model refutes the previous health care approach of impairment focus care. The ICF model is inclusive of the patient's participation, activity and the limitations he or she faces. This holistic approach has been adopted around the world, creating better patient centered care (The ICF: An Overview, n.d.). In order to carry this out effectively WHO stresses the role of collaboration between disciplines stating, "teamwork and collaboration across disciplines, providing coordinated care and ensuring continuity of care" (WHO, People at the Centre of Care, n.d.). An initiative to implement standards for interprofessional education and practice has been set forth to support the ideals of the ICF model.

Recently, the Interprofessional Education Collaborative Expert Panel (2011) created core competencies to add to the initiative to implement standards into the education system. These core competencies were developed based on frameworks that highlight the importance of interprofessional collaboration. The WHO adopted a framework that discusses the relationship between IPE and IPP. The Interprofessional Education for Collaborative Patient-Centered Practice (IECPCP) framework mentioned by D'Amour and Oandasan (2005) used that relationship and broke it down to the factors involved. The framework included factors influencing both IPE and IPP, formulating a cohesive design to base a plan of action from. The interdependency that exists between IPE and IPP emphasizes the importance of formulating an initiative (Interprofessional Education Collaborative Expert Panel, 2011). In order to have the most effective patient outcomes, IPP must be exercised. Comparatively, in order to successfully

carry out collaborative practice, health professionals must be well educated on the topic of interprofessional collaboration.

Education can be broken down into teaching factors versus institutional factors, which all play a role in learner outcomes. For IPE to be implemented in the education programs the learning context, faculty development, resources and administrative processes must be considered. Additionally, the Interprofessional education Collaborative Expert Panel (2011) generated factors that influence the efficacy of collaborative practice which included interactional and organizational factors. Shared patient-oriented goals, a common vision, teamwork, knowledge on roles/responsibilities, proper governance and formalization all factor into patient outcomes and healthcare provider satisfaction (D'Amour & Oandasan, 2005). If all of the aforementioned factors are included within the health care model, not only will provider and patient outcomes increase, but health organization outcomes are to improve at the macro level.

The core competencies developed by Interprofessional Education Collaborative Expert Panel (2011) take into account both frameworks mentioned and were proposed to create standards for IPE across health disciplines. The core competency domains included: values/ethics for interprofessional practice, roles/responsibilities, interprofessional communication and teams/teamwork. The domains provide a foundation for all healthcare fields to develop initiatives to implement IPE/IPP (Interprofessional Education Collaborative Expert Panel, 2011). As mentioned, the current lack of IPE in programs across health disciplines is a concern for all, which calls for more research and common goals to standardize IPE in the education system.

According to ASHA (2016), IPE/IPP literature within the field of healthcare has largely focused on acute care, intensive care, and public health. ASHA also indicated that IPE/IPP literature within other fields, including SLP, has only emerged recently. As a result of the rising discussion of IPE/IPP in speech-language pathology, ASHA has integrated IPE/IPP into the ASHA's Envisioned Future: 2025. This initiative projects that IPE will be integrated into the education and training of new professionals in speech-language and hearing sciences and that ASHA members will engage in IPP by the year 2025 (ASHA's Envisioned Future: 2025, n.d.) In ASHA's Special Interest Group Reader on IPE/IPP (2016), the association adopted the aforementioned frameworks and competencies to create educational guidelines for implementation and measurement of IPE in the classroom and clinical settings. ASHA (2016) has identified IPE learning objectives specific to speech, language, and swallowing, which are as follows: 1) speech- developing skills for communicating with patients who have speech difficulties, 2) language- assessing general comprehension before providing complex instructions, and 3) swallowing- taking precautions to prevent aspiration.

Though there is discussion about the process and significance of IPE in communication sciences and disorders (CSD) literature, there is little research on the implementation, effectiveness, and benefits of IPE specific to SLP. Thus, IPE literature specific to speech, language, and swallowing, with correlating IPE objectives established by ASHA, is even scarcer.

IPE in Current Programs

IPE is beginning to be evident in healthcare programs, including CSD, in universities throughout the United States and Canada. The University of Toronto has integrated IPE into the curriculum for health science studies, including SLP, in which students engage in learning experiences such as case-based and IPE in a practice setting. Students are also offered a number

of elective opportunities for IPE (University of Toronto, n.d.). Similarly, the Massachusetts Institute of Health Professions requires students to take three interprofessional courses that involve core competencies for IPP as well as team-based simulation experiences (IMPACT Practice Three-Course Sequence, MGH Institute of Health Professional, n.d.). At the University of Vermont, a virtual clinic that allows students studying SLP, exercise science, medicine, nutrition, social work, physical therapy, pharmacy, and adult and geriatric nurse practitioner to collaborate with one another on a virtual patient case designed by faculty (UVM CSS Virtual Clinic, University of Vermont, n.d.). Students at James Madison University from CSD, nursing, and psychology were given the opportunity to participate in simulated cases in a virtual environment (Dudding, Hulton, & Stewart, 2016). Workshops implemented at the University of South Carolina allowed SLP, pharmacy, social work, physical therapy and students from other disciplines to learn from and with each other while working with patients with aphasia and their families (University of South Carolina, n.d.). Ohio University has facilitated intercollaborative research experiences at nursing and rehabilitation centers between the Heritage College of Osteopathic Medicine and the College of Health Sciences and Professions (Grenert, 2014).

The aforementioned programs serve as great examples of how to implement IPE, but data for the impact of these programs on student education of interprofessional collaboration is limited to a survey conducted at California State University-Sacramento. Within CSU-Sacramento's IPE program, graduate SLP and undergraduate nursing students educated each other about the disciplines, then applied the interprofessional knowledge to live clinical simulations. According to a post-program survey, 94% of the students reported that learning with students from another discipline would likely benefit their facilitation of future interprofessional relationships (Hagge, 2015).

Dysphagia

Dysphagia may result in poor nutrition, dehydration, increased risk of aspiration, aversion to eating and drinking, social isolation or embarrassment related to eating, and in severe circumstances, death (ASHA, Swallowing Disorders (Dysphagia) in Adults, n.d.). Dysphagia can occur across the lifespan, presenting in geriatric and pediatric populations, as a result of various etiologies. Research by Bhattacharyya (2014) suggests that 1 in 25 adults experience difficulty with swallowing in the United States. Etiologies include neurological diseases such as amyotrophic lateral sclerosis, Parkinson's disease, and cerebral palsy; stroke; brain and spinal cord injury, cancer of the mouth, throat, and esophagus, and structural abnormalities of the mouth (ASHA, Swallowing Disorders (Dysphagia) in Adults, n.d.).

Pediatric dysphagia affects 25-45% of typically developing children and 30-80% of children who have developmental disorders or delays (ASHA, Pediatric Dysphagia, n.d.). Etiologies include developmental disability, neurological disorders (e.g. Cerebral palsy), neuromuscular incoordination (caused by prematurity and low birth weight), complex medical conditions (e.g., heart disease and gastroesophageal reflux disease), structural abnormalities (e.g., cleft lip and palate), genetic syndromes (e.g., Prader-Willi), medication side effects, sensory issues, and behavioral factors (e.g., food refusal). Due to advances in medicine, the chances of survival for infants with medically complicated births are exponentially greater, which increases the number of infants that require neonatal care, including dysphagia services. Thus, the prevalence of pediatric dysphagia is increasing.

Dysphagia Team

It is the role of the SLP to contribute to the diagnosis of dysphagia and implement feeding and swallowing treatment for individuals across the lifespan. This is done in collaboration with other professionals, including but not limited to nurses, occupational therapists, physical therapists, and physicians. In a medical setting, the SLP's role in dysphagia assessment begins with a referral from the patient's doctor. Instrumental and/or informal assessment follows, which typically begins with a bedside swallow study performed by either an SLP or a registered nurse (RN). The purpose of the initial evaluation is to clear the patient for feeding, until further evaluation can be performed by the SLP. After the initial status of the patient is determined, more extensive evaluation is performed (e.g. fiberoptic endoscopic evaluation of swallowing [FEES]) and a therapy plan is formulated (Weinhardt et. al., 2008).

The goal of feeding and swallowing therapy is to create a safe and more effective swallow through therapy techniques implemented in collaboration with other professionals. The SLP may consult with physical therapists about postures that encourage a safe swallow, while the occupational therapist may be consulted for sensory and motor difficulties as well as prosthetics related to feeding. Dieticians and nutritionists are involved in modifying food and liquid textures to prevent aspiration and recommend special diets while maintaining adequate nutrition (ASHA, Dysphagia Teams, n.d.). SLPs also work alongside nurses, physicians, neurologists, social workers, and other professionals in order to increase the quality of life for the patient (ASHA, Dysphagia Teams, n.d.). In addition, the dysphagia team for infants may involve a neonatologist and a certified lactation consultant (ASHA, Pediatric Dysphagia, n.d.). Degree of collaboration between the SLP and these professionals varies based upon the patient's severity of dysphagia and concomitant disorders.

Due to the aforementioned safety concerns that coincide with dysphagia, it is imperative that all health disciplines involved work as a team to provide better patient care. SLPs who are actively engaged in collaboration with other professionals can deliver more effective outcomes for patients. Therefore, integration of interprofessional collaboration is a critical component of dysphagia treatment and future health care professionals would benefit from IPE in educational programs. The purpose of this study is to contribute to the existing literature by exploring interprofessional collaboration and its benefits in the area of dysphagia.

Methods

To further investigate the presence of interprofessional collaboration, we designed a survey for students in higher education. The survey addressed the inclusion, type, and benefit of interprofessional collaboration experience, as well as the roles and responsibilities of health disciplines involved in evaluation and treatment of dysphagia. The targeted population included students studying occupational therapy, physical therapy, speech-language pathology, nursing, dietetics and medicine.

Participants

The survey was completed by 126 participants. The participants included students (37 undergraduates, 11 first year graduates, 46 second year graduates, 28 third year graduates, and 4 graduated students) across health disciplines involved in evaluation and treatment of dysphagia (8% OT, 27% PT, 0% medicine, 6% dietetics and nutrition, 13% nursing and 45% SLP, 1% other). The sample was comprised of participants ages 19 to 30+, located in five states (i.e., Colorado, Illinois, Indiana, Kentucky, New York) across the United States. It is important to note that the participant selection was limited, as it was not made available to all universities in the

United States and was completely on a voluntary basis, and thus may not be representative of the general population.

Materials

An online survey was constructed by the authors, which contained 15 questions regarding demographics and pertinent information about interprofessional collaboration experience within programs pertaining to dysphagia. The survey was formatted on Select Survey, an online software program created by ClassApps, and approved through the Illinois State University Institutional Review Board (IRB). It was designed to examine the relationship between level of interprofessional collaboration experience and knowledge of roles of the disciplines involved in the evaluation and treatment of dysphagia. A cover letter was created which included a description of the study and information about how consent to participate was obtained, this message was contained within an email draft (see Appendix A) that concluded with a direct link to the survey.

When the survey was accessed, the first page included demographic data including: age, current level of education, discipline and location. The second page involved one question regarding whether or not the participant has participated in an interprofessional collaboration experience. If the participant answered 'yes' then the participant was directed to the third page of questions involving the description of the experience (facilitation, settings & cooperating discipline). In addition, the third page included two questions asking about the effect the experience had on their ability and confidence to work with other professionals. If the participant selected 'no' to the question regarding experience on page two, they were directed to the final page of questions. The final page included five multiple choice questions regarding the roles of the different disciplines (SLP, OT, PT, nursing & dietetics/nutrition) involved in the evaluation

and treatment of dysphagia. The questions involved definitions borrowed from ASHA's website. See Appendix A for the survey.

Procedure

An email was drafted and sent to department heads in Colorado State University, Illinois State University, Indiana University, Bellarmine University, and Kentucky University within the target disciplines, as listed above. The email contained a link to the survey as well as a brief description of the study and the consent agreement. The participants were made aware of any potential discomfort and that the survey was voluntary, allowing the participant to opt out at any time throughout. This email was then forwarded to the current students involved in the program.

Data Analysis

The authors descriptively analyzed data collected via Select Survey. The online software provided total number of survey responses per question and associated percentages. These software-generated results were descriptively analyzed to investigate the correlation between participant level of IPE and accuracy on knowledge-based dysphagia team questions.

Results

Interprofessional Collaboration Section

Data were analyzed for 126 completed surveys. Of the respondents that completed the survey, 73 (58%) reported that they had participated in interprofessional collaboration and 53 (42%) reported that they had not participated in interprofessional collaboration. Graduates accounted for 89% and undergraduates accounted for 11% of those with experience, and graduates accounted for 42% and undergraduates accounted for 56% of those without interprofessional collaboration experience. Of those with interprofessional collaboration

experience, 53 (73%) reported that collaboration was facilitated by their academic program. Academic program-facilitated collaborative experiences were offered in both clinical and lecture settings (5%), lecture only (30%), and clinic only (42%). The remaining 22% of respondents reported interprofessional collaboration opportunities offered in small groups and discussions, simulations, online courses, a medical mission trip, an internship, and experience in the school setting. Respondents reported collaborating with OT (28%), PT (38%), medicine (36%), nursing (72%), SLP (36%), and other (42%). Other included collaboration with the following: social work, audiology, teachers and classroom aids, psychology, vocational rehabilitation therapy, art and music therapy, dentistry, optometry and ophthalmology, pharmacy, physician assistant, pastor, family and consumer science, child life and developmental therapy.

Additionally, 93% of participants reported that they believed their interprofessional experience increased their ability to collaborate with professionals outside of their own discipline, while 7% did not. Participants were asked to rate, on a scale of 1 (not confident) to 5 (confident), how confident they would feel collaborating with another professional to improve client and patient health outcomes; 34% reported that they were highly confident (5), while 0% reported that they were not confident. A rating of 4 received the highest percentage of responses with 43%.

Knowledge of other professions' role in treatment of swallowing disorders

Overall, participants answered the five knowledge-based questions about disciplines involved in the dysphagia team with an average of 55% accuracy. Participants with interprofessional collaboration experience answered with an average of 53% accuracy, and participants with no experience had an average of 57% accuracy. Those with collaborative experiences in a lecture only setting had an average of 53% accuracy, those in a clinic only

setting had an average of 50% accuracy, and those in both a lecture and clinical settings had an average of 50% accuracy. Graduates with IPE answered questions with an average of 54% accuracy, and graduates without IPE had an average of 66% accuracy. Undergraduates with IPE answered questions with an average of 40% accuracy, and undergraduates without IPE had an average of 50% accuracy. Students studying SLP had an average of 53% accuracy, with those with interprofessional collaboration experiences having an average of 55% accuracy, and those without experience having an average of 53% accuracy.

Table 1
Average Percentage Accuracy on Dysphagia Team Questions

Overall	**55%**
IPE experience	**53%**
Graduate	54%
Undergraduate	40%
SLP	55%
Lecture only	53%
Clinical	50%
Both	50%
no IPE experience	**57%**
Graduate	66%
Undergraduate	50%
SLP	53%

Discussion

The goal of the current study was to identify the presence of IPE in higher education programs related to dysphagia and identify the benefits of IPE experience on dysphagia competency. According to the results, only 58% of students in university health programs experienced IPE. This low percentage is less than ideal and supports the need for implementation of IPE in all university health programs.

Based on the results, participants who reported having no experience with IPE demonstrated better competency (57% accuracy) of the roles and responsibilities of members of the dysphagia team than those who reported experience with IPE (53% accuracy), which is contrary to author expectation. It is reasonable to expect that students who have received education on interprofessional collaboration would have greater accuracy on questions about the dysphagia team compared to students without IPE. However, it is imperative to note that both participants with and without IPE demonstrated low accuracy on competency questions. These data could have implications about the quality of IPE that participants received within their respective programs. However, these results could also be due to survey content limitations. The operational definitions for each discipline involved in the dysphagia team were adopted from ASHA's description of dysphagia teams (ASHA, Dysphagia Teams, n.d.) and may have contained technical terminology unfamiliar to participants. In particular, participants studying OT, PT, nursing, or dietetics and nutrition may have found the description of their respective disciplines unfamiliar, since they were created by ASHA instead of their own professions' national organization. Another consideration for this discrepancy is the possibility that not all participants had IPE specific to dysphagia, thus leading to a higher rates of incorrect answers on dysphagia team questions. This is also a limitation of the survey, as authors did not ask participants to specify their experience with dysphagia before redirecting to the content questions.

Additional limitations were noted regarding sample size and diversity. Not all health professions involved in evaluation and treatment of dysphagia participated in the survey. This leaves out key members of the team (e.g. medicine). The survey could have encompassed a larger number of participants with more diverse demographic variation, providing better

representation of the targeted population. Although these limitations were noted, the results are still valuable in contributing to existing literature. However, recommendations for studies have been formulated to contribute to future research. The recommendations include:

1. Target IPE specifically related to dysphagia
2. Gather information about intensity of IPE and topics included
3. Increase sample size and diversity of disciplines
4. Collect data on pre- and post-IPE experience to analyze benefits of specific programs
5. Identify the prevalence of IPE integrated into program curriculum

As a discipline, there needs to be a push for required interprofessional collaboration in the classroom and during clinical experiences. Because an SLP career almost always involves other disciplines, IPE should be considered a high priority and subsequently programs should have a stronger emphasis on learning and training. Our results reflect the lack of training/information given about the roles of other professionals in regards to dysphagia evaluation and treatment. As mentioned previously, scopes of practice can often have blurred lines, which is why education on all health disciplines is important. The literature often emphasizes the importance of a team approach because of the safety concerns that coincide with swallowing deficits, therefore the results of this survey support the growing push for IPE in our field today. In order to provide the most beneficial care to patients, collaboration between disciplines is necessary. Our intent is to bring awareness to the need for inclusion of interprofessional learning in specified programs, especially those involved with the evaluation and treatment of swallowing disorders. The findings are reported to help support the initiative ASHA has set forth for IPE and IPP within the field of SLP in 2015.

Personal Recounts

Evidence of IPE in universities was previously discussed in the Introduction. Not included in that discussion was the current study's authors' personal IPE experience at Illinois State University. Both authors participated in an elective IPE opportunity with other SLP graduate students and undergraduate nursing students from Illinois State University. IPE occurred in lecture and live simulation settings. During lecture, instructors from either or both disciplines taught students about the scope of practice for SLP and nursing, medical terminology, commonly co-treated disorders, amongst other foundational concepts necessary for interprofessional collaboration. The instructors also prompted small group discussion between the disciplines, during which students explained aspects of their discipline to the other. The IPE experience also consisted of simulations with live actors in a mock hospital setting in the Mennonite College of Nursing's Simulation Lab. Two SLP graduate and one nursing student were grouped together and presented with a client case and chart before assessing the "client". Dysphagia, motor speech, and language disorders were included in client cases. After assessment, the students reviewed their performance with a panel of retired and working nurses and SLPs. Students participated in lectures one day a week throughout the Fall 2015 semester, and experienced a total of 4 simulations. Below are author reflections on their IPE experience. The following are the personal recounts of the simulation by the two authors of the present study:

Emily

The interprofessional collaboration experience marked the first time I had been exposed to IPE. Before this experience, I had very little education about the variety of disciplines and how we co-treat with other disciplines. From personal experience I know how important it is to have a team that communicates efficiently to work toward common goals, especially in the

medical field. However, prior to this collaboration experience I had not thought about all of the necessary steps and the level of knowledge that was necessary in order for teamwork to be implemented skillfully. Specific to collaboration with nursing, this experience revealed that I did not know as much as I had previously thought regarding the nursing scope of practice. As we were educated on the other discipline's scope, it made communication easier during the simulation tasks. Not only did communication improve, the level of comfort in assessing the client increased. There were several lessons learned through the experience including: when assessing a nonverbal client always address the client even if the caregiver does all of the talking, the order in which assessment occurred in an acute setting, chart reading, and that assessment can be done simultaneously by the SLP and nurse (i.e. taking vitals while assessing orientation and speech). Exposure to the procedures and pace of evaluation in the acute care setting is the only way to prepare yourself for what you, as a professional, are expected to do in practice.

A lot was to be learned by the experience, however it was minimal exposure. This is why IPE should be standardized within program curriculum. As discussed above, there are many professions involved in client care and many factors that contribute to a professional's knowledge on IPP. Additional measures could be added to this experience such as, guest speakers of active practitioners and inclusion of other professionals. These additions would encourage a diverse learning experience to carry over into future practice. Overall, the experience was beneficial and supports the movement towards IPE standardization.

Alexa

Prior to participating in interprofessional collaboration with nursing students, I had not considered a team approach for treating speech, language, and swallowing disorders. These disorders clearly fall under the scope of practice for SLPs, but I have learned that assessment and

treatment for SLP involves more than one professional. This is especially true for assessment of patients in acute medical settings, who often have more complex medical cases. In my IPE lecture experience, I learned about the importance of reviewing medical history and checking client vitals for signs of aspiration. For instance, a history of pneumonia could be an indicator of a swallowing disorder, or dysphagia. Fevers and decreases in oxygen saturation level during eating are other signs of dysphagia that would need to be monitored. Since nurses monitor patient health on a daily basis in acute settings, it is important to be in constant communication with a patient's nurse. During my first simulation experience, I failed to facilitate this interaction. Rather than communicating with the nurse, I interacted with the client and family and made an assessment on this information. In the debriefing with SLPs and nurses, I was made aware of my lack of collaboration during assessment as well as the repercussions this could have on my patient's health. During lectures, I was familiarized with terminology that nurses may use and learned about the nursing scope of practice. This aided my understanding of nursing and led to better collaboration during simulations. It also gave me an opportunity to teach nursing students about my scope of practice and educate them on how to communicate most effectively with patients with certain disorders or conditions. This brought me to the realization that educating other healthcare professionals about my role and responsibility in patient care is an important aspect of interprofessional collaboration.

This experience made me more aware of the importance of collaborative practice in the healthcare settings and has better prepared me to collaborate with professionals in the future. Though my IPE experience with nursing students was very applicable to working with patients in a medical setting, there are many other settings in which SLPs work and many other disciplines with which SLPs collaborate. Through my IPE experience, I have become more aware of the

importance of collaborative practice and am more prepared to facilitate collaboration with nurses as well as other disciplines across settings in my future clinical practice.

Appendix A

Email recruitment script sent to Department Heads/Chairs

Dear ____,

We are Emily Foster and Alexa Wagner, speech-language pathology graduate students at Illinois State University. As part of our graduate program requirement, we are conducting a survey under the supervision of Mrs. Rene McClure and Dr. Ann Beck designed to investigate the implementation and benefits of interprofessional collaboration within health programs in higher education.

We would appreciate it if you would forward the information below to your (e.g., graduate students in speech-language pathology, physical therapy, occupational therapy, etc.) students. The survey should only take 5-10 minutes of their time and have been approved by the Illinois State University Institutional Review Board.

If you have any questions about this study you can contact us, Emily Foster (efoste1@ilstu.edu) and Alexa Wagner (aawagn1@ilstu.edu). For questions about research participants' rights and/or a research related injury or adverse effects please contact the Research Ethics & Compliance Office (309) 438-2529 and/or rec@ilstu.edu.

Email recruitment script to be sent to students:

We are Emily Foster and Alexa Wagner, speech-language pathology graduate students at Illinois State University. As part of our graduate program requirement, we are conducting a research project under the supervision of Mrs. Rene McClure and Dr. Ann Beck. This research is a survey designed to investigate the implementation and benefits of interprofessional collaboration within health programs in higher education.

If you agree to participate, then we ask you to complete a short electronic survey that should take no more than 5-10 minutes to complete. The only possible risks are that you might feel a question is difficult to answer and so you might feel uncomfortable trying to answer it and that you might feel you have to participate because this email was sent by the head of your department. If you do feel uncomfortable answering a question, you do not have to answer it or you can stop taking the survey at any time. The head of your department will not know who chose to participate and who did not. Your participation in this survey is voluntary and there will be no penalty to you for not completing it nor will your grade or standing in your department be affected. All responses will be anonymous. While there is no expected benefit to you by taking this survey, we hope that the information gained will allow us to determine the use and effectiveness of interprofessional education.

If you have any questions about this study you can contact us, Emily Foster (efoste1@ilstu.edu) And Alexa Wagner (aawagn1@ilstu.edu). For questions about research participants' rights and/or a research related injury or adverse effects please contact the Research Ethics & Compliance Office (309) 438-2529 and/or rec@ilstu.edu.

You can enter the survey by clicking on the link below. By clicking on this link you are verifying that you are 18 years or older and that you are giving your voluntary consent to participate.

survey link

Thank you,

Emily Foster and Alexa Wagner

DEMOGRAPHICS

1.) What is your age?

a. (starting at 18 up to 30)

2.) What is your current education level?

a. Freshman (undergraduate)
b. Sophomore (undergraduate)
c. Junior (undergraduate)
d. Senior (undergraduate)
e. 1st year graduate
f. 2nd year graduate
g. 3rd year graduate
h. 4th year graduate
i. 5th year graduate and beyond
j. Other (please specify):

3.) What is your area of study?

a. Occupational therapy
b. Physical therapy
c. Medicine
d. Nursing
e. Dietetics/nutrition
f. Speech-language pathology
g. Other:

4.) In what state is your program of study?

INTERPROFESSIONAL COLLABORATION

As defined by the World Health Organization, interprofessional education occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes.

5.) Have you ever participated in an interprofessional collaboration, as defined above?

a. Yes
b. No

6.) If yes, was the interprofessional collaboration facilitated by your academic program?

a. Yes
b. No

7.) If yes, in which of the following settings are opportunities for interprofessional collaboration offered?

a. Lecture
b. Clinical setting
c. Other (fill in the blank)

8.) With which other discipline(s) did you collaborate during your interprofessional experience?

a. Occupational therapy
b. Physical therapy
c. Medicine
d. Nursing
e. Dietetics/nutrition
f. Speech-language pathology
g. Other:

9.) Do you believe your inter professional experience increased your ability to collaborate with professionals outside of your own discipline?

a. Yes
b. No

10.) How confident would you feel collaborating with another professional to improve client/patient health outcomes?

1 (not confident) 2 3 4 5 (highly confident)

Knowledge of other professions' role in treatment of swallowing disorders.

11.) What discipline evaluates and treats patients/students with swallowing problems, including direct modifications of physiologic responses and indirect approaches such as diet modification?

a. Occupational therapy
b. Physical therapy
c. Nursing
d. Dietetics/nutrition
e. Speech-language pathology
f. Other:

12.) What discipline evaluates and treats sensory and motor impairments and assesses prosthetic needs related to self-feeding and swallowing?

a. Occupational therapy
b. Physical therapy
c. Nursing
d. Dietetics/nutrition
e. Speech-language pathology
f. Other:

13.) Which discipline evaluates and treats body positioning, sensory and motor movements necessary for safe and efficient swallowing, recommends appropriate seating equipment needed during feeding?

a. Occupational therapy
b. Physical therapy
c. Nursing
d. Dietetics/nutrition
e. Speech-language pathology
f. Other:

14.) Which discipline works with the patient/student and caregivers in implementing and maintaining safe swallowing techniques and compensatory or facilitation strategies during meals and when taking medications?

a. Occupational therapy
b. Physical therapy
c. Nursing
d. Dietetics/nutrition
e. Speech-language pathology
g. Other:

15.) Which discipline evaluates nutritional needs; follows therapy recommendations regarding consistencies of liquids and solid foods, determines needs for special diets; and ensures adequate nutrition when using alternative means of nutrition?*

a. Occupational therapy
b. Physical therapy
c. Nursing
d. Dietetics/nutrition
e. Speech-language pathology
f. Other:

References

American Speech-Language-Hearing Association. (n.d.). ASHA's Envisioned Future: 2025 Retrieved from http://www.asha.org/About/ASHAs-Envisioned-Future/

American Speech-Language-Hearing Association, Special Interest Division 13 Swallowing and Swallowing Disorders (Dysphagia). (n.d.). Dysphagia Teams. Retrieved from http://www.asha.org/Practice-Portal/Clinical-Topics/Pediatric-Dysphagia/Dysphagia-Teams/

American Speech-Language- Hearing Association (2016). Interprofessional Education and Collaboration in Communication Sciences and Disorders: An introduction and case-based examples of implementation in education and health care settings. Retrieved from http://www.asha.org/uploadedFiles/IPE-IPP-Reader-eBook.pdf

American Speech-Language-Hearing Association. (n.d.). Pediatric Dysphagia. Retrieved from http://www.asha.org/PRPSpecificTopic.aspx?folderid=8589934965&section=Causes

American Speech-Language Hearing Association. (2016). Interprofessional Education and Interprofessional Practice in Communication Sciences and Disorders. Retrieved from http://www.asha.org/uploadedFiles/IPE-IPP-Reader-eBook.pdf

American Speech-Language-Hearing Association. Swallowing Disorders (Dysphagia) in Adults. (n.d.). Retrieved from http://www.asha.org/public/speech/swallowing/Swallowing-Disorders-in-Adults/

Bhattacharyya, N. (2014). The Prevalence of Dysphagia among Adults in the United States. *Otolaryngology–Head and Neck Surgery, 151*(5), 765–769. Retrieved from http://oto.sagepub.com.libproxy.lib.ilstu.edu/content/151/5/765.full.pdf+html

D'Amour, D. & Oandasan, I. (2005). Interprofessionality as the field of interprofessional practice and interprofessional education: An emerging concept. *Journal of Interprofessional Care, 1*, 8-20.

Dixon, D., Fagan, E., McNeilly, L. & Nunez, L. (2015). The Why, What and How of Interprofessional Collaboration [webinar]. *ASHA Webinar Series.* Retrieved from http://www.asha.org/Practice/Interprofessional-Education-Practice/ (see PDF)

Dudding, C.C., Hulton, L. & Stewart, A.L. (2016). Simulated Patients, Real IPE Lessons. *The ASHA Leader, 21*, 52-59.

Grenert, J. (2014). Interprofessional Education Symposium highlights growing Ohio University collaborations on health education. Retrieved from https://www.ohio.edu/compass/stories/14-15/10/Heritage-College-Interprofessional-Education.cfm

Hagge, D.K. (2015) Dealing With Dysphagia—Together In an interprofessional education program, nursing and speech-language pathology students pool their expertise for better training and patient care. *The ASHA Leader, 20*(1), 34-36. doi:10.1044/leader.AE.20062015.34

The ICF: An Overview. (n.d.). Retrieved from https://www.cdc.gov/nchs/data/icd/icfoverview_finalforwho10sept.pdf

Interprofessional Education Collaborative Expert Panel. (2011). *Core competencies for interprofessional collaborative practice: Report of an expert panel.* Washington, D.C.: Interprofessional Education Collaborative. Retrieved from http://www.aacn.nche.edu/education-resources/ipecreport.pdf

MGH Institute of Health Professions. (n.d.). IMPACT Practice Three-Course Sequence. Retrieved from https://www.mghihp.edu/academics/impact-practice-three-course-sequence

Weinhardt, J., Hazelett, S., Barrett, D., Lada, R., Enos, T., & Keleman, R. (2008). Accuracy of a bedside dysphagia screening: a comparison of registered nurses and speech therapists. *Rehabilitation Nursing, 33*(6), 247–252.

World Health Organization. (2010). *Framework for Action on Interprofessional Education & Collaborative Practice,* 10. Retrieved from http://apps.who.int/iris/bitstream/10665/70185/1/WHO_HRH_HPN_10.3_eng.pdf

University of South Carolina. (n.d.). Interprofessional Education. Retrieved from http://ipe.sc.edu

University of Toronto. (n.d.). Centre for Interprofessional Education. Retrieved from http://ipe.utoronto.ca/interprofessional-education-curriculum

University of Vermont. (n.d.). UVM CSS Virtual Clinic. Retrieved from https://www.uvm.edu/medicine/simlab/?Page=education.html&SM=ipemenu.html

World Health Organization. (n.d.). People at the Centre of Care. Retrieved from http://www.wpro.who.int/health_services/people_at_the_centre_of_care/definition/en/