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Impact of Interprofessional Falls Risk Assessment Program on Student Perceptions of Other Healthcare Professionals



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ABSTRACT

Fall prevention programs with exercise interventions and medication reviews improve short-term function for community-dwelling older adults with risk of falls.¹ We describe an Interprofessional Falls Risk Assessment Program for community-dwelling adults to teach students how to assess falls risk associated with poor balance and medications that increase falls risk. The primary objective of this program was to evaluate whether participation in this Interprofessional Falls Risk Assessment Program altered the attitudes toward collaborative team-based healthcare practice in physical therapist and pharmacist students. Second-year physical therapist students and third-year pharmacist students were involved with the program. The Interprofessional Falls Risk Assessment Program consisted of three sessions. Sessions 1 and 2 were held in an academic setting, and Session 3 was held at a local senior living facility. Fall risk assessments were initially practiced by students amongst themselves, then formally provided to elderly volunteers from the community, and finally were provided to residents at a senior living facility. Students' attitudes toward collaborative practice were assessed before and following the program using the Student Perception of Interprofessional Clinical Education (SPICE-R). We found that SPICE-R scores increased following participation in this program. The Interprofessional Falls Risk Assessment Program represents a new IPE resource to increase students' interprofessional attitudes, knowledge, and experience before they enter the healthcare workforce. Our results indicate that IPE using an Interprofessional Falls Risk Assessment Program has a positive influence on students' understanding of both their own and other healthcare professionals role within an interprofessional team.

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1. Format

The Interprofessional Falls Risk Assessment Program was conducted in three separate sessions. Sessions 1 and 2 involved large and small group discussions and practice of fall risk assessments and were held in a classroom setting equipped with patient examination rooms. Session 3 was held at a local senior living facility (see Fig. 1).

2. Target audience

Students were recruited from classes on two separate occasions. Physical therapist and pharmacist professors announced the program as an opportunity to gain experience interacting with community dwelling older adults, become familiar with several fall risk screening tools, collaborate interprofessionally, develop team skills, apply clinical skills and provide clinical recommendations.

Participants consisted of 6 physical therapist and 10 pharmacist students. Physical therapist students were enrolled in the second professional year of study in the 3-year Doctor of Physical Therapy Program. Pharmacist students were enrolled in the third professional year of study in the 4-year Doctor of Pharmacy Program and had completed the American Pharmacists Association Medication Therapy Management certificate. All physical therapist and pharmacist students had some clinical experience prior to participating

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in this program.

Students completed a qualitative survey asking them to describe any prior academic or clinical interprofessional experience in which they had participated. The number of students with previous academic and clinical IPE experiences is listed in Table 1. The majority of both physical therapist and pharmacist students reported having some previous IPE experiences (e.g., simulation experience, clinical placements).

3. Objectives

The primary objective of this interprofessional community-based program was to evaluate whether participation in an Interprofessional Falls Risk Assessment Program altered the physical therapist and pharmacist students' attitudes toward interprofessional healthcare teams who work together to plan, coordinate, and/or deliver patient care and the team approach to care.

4. Activity description

The Program began in October 2016 and was completed in December 2016. The study was approved by the Institutional Review Board of the University at Buffalo.

The Interprofessional Falls Risk Assessment Program consisted of three separate sessions. Session 1 included all students ($n = 16$), faculty ($n = 3$), and a dual degree DPT - Master's of Public Health student involved with the program. The goal of this session was for the students to become familiar with each other's profession, begin to develop a rapport within their own team, and practice the procedures that would be used in Session 2 and 3. The initial Session 1 activity was an in depth discussion of the benefits of interprofessional collaborative practice on patient healthcare outcomes

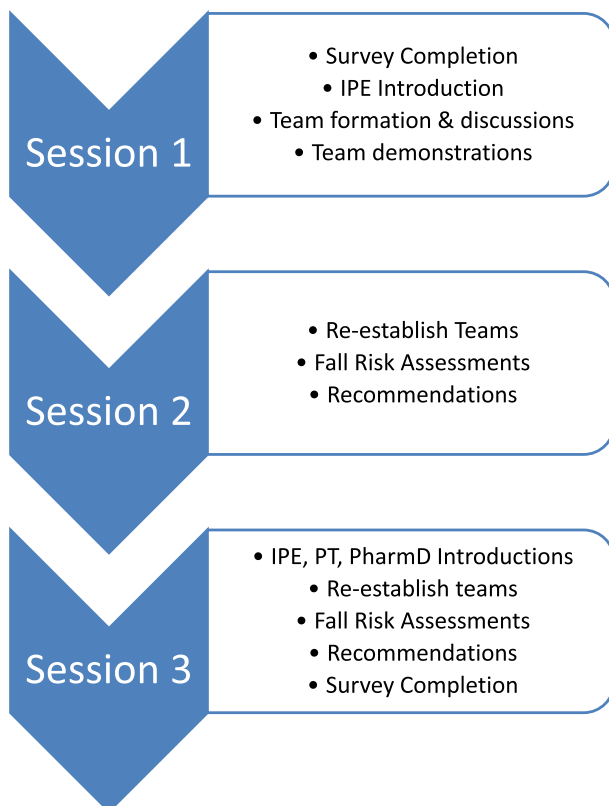


Fig. 1. Flow chart of the Interprofessional Falls Risk Assessment Program.

detailing its importance in clinical practice. Students were then divided into 5 interprofessional teams. The teams consisted of 2 pharmacist and 1 physical therapist student, with the exception of one team consisting of 2 students from each profession. The teams learned about each other's roles and responsibilities by discussing their respective professions including curricula, clinical requirements, and each other's professional scope of practice. Students then discussed how each profession would assess a community dwelling older adult to determine their fall risk. Specifically, pharmacist students were asked to explain Medication Therapy Management (MTM) and the Medication Falls Risk Assessment Tool (MFRAT)^{2–4} that identifies and ranks Fall Risk Increasing Drugs (FRIDs) to the physical therapist students. Physical therapist students were asked to explain the Berg Balance Scale (BBS),^{5–7} an objective, reliable and valid tool used to measure balance by assessing the performance of functional tasks, to the pharmacy students. After these discussions, students demonstrated and practiced the falls risk assessment procedures on each other, including the objective tests and measures (MTM, MFRAT, BBS). This session ended with a 15 minute debriefing period exploring student's thoughts and reactions to the session, interprofessional collaboration, and roles and responsibilities of physical therapists and pharmacists.

Session 2 was held five weeks following Session 1. This session served as the first opportunity for students to perform as an interprofessional team. During this session, interprofessional student teams were assigned healthy, older adult volunteers from the community to assess their fall risk. Working in the patient examination rooms, one pharmacist student provided MTM and the MFRAT to the patient, while the physical therapist student observed. Next, the physical therapist student performed the Berg Balance Scale assessment, while the pharmacist students observed. Once the assessments were completed, the physical therapist and pharmacist students excused themselves and conferenced together in another room to develop their final recommendations for their volunteer. Prior to presenting the recommendations to the volunteer, the recommendations were reviewed by the supervising faculty who were a licensed physical therapist and pharmacists. These recommendations were then discussed with the volunteer and questions were answered. Recommendations ranged from "maintain your current activity" to "please discuss this action plan with your primary care provider". Each team completed assessments with two volunteers, allowing each pharmacist student to conduct an assessment and be an observer. This session with volunteers from the community ensured the students were prepared to provide the Interprofessional Falls Risk Assessment Program to older adults in a senior living facility.

Session 3 was held two weeks later at a local, city-subsidized, senior living facility, home to approximately 100 residents over the age of 62. Students assessed the fall risk of seven of these community dwelling older adults providing MTM and using the MRFAT and BBS, and made collaborative recommendations to the resident. An example of a recommendation was to "participate in local community group exercise classes to enhance strength and endurance". Residents were also educated by the pharmacist students and physical therapist on medications associated with an increased risk of falls and the three sensory inputs required for balance (somatosensory, visual, and vestibular). Upon completion of the Interprofessional Falls Risk Assessment Program, students completed the post program SPICE-R assessment.

5. Assessment

The SPICE-R survey was used to assess students' attitudes both before and after the Interprofessional Falls Risk Assessment

Table 1
Prior academic or clinical interprofessional experience.

Demographic Variable	Physical Therapist Students (n = 6)	Pharmacist Students (n = 10)
Previous IPE Experience		
Yes	5	7
No	1	3

A Chi-square analysis was completed indicating there was no significant difference in interprofessional experience between the two student cohorts ($p > 0.05$).

Program. This instrument evolved from the Student Perceptions of Physician-Pharmacist Interprofessional Clinical Education (SPICE) instrument. The SPICE instrument showed promise as a valid and reliable measure of pharmacy and medical student perceptions of interprofessional clinical education, concluding that it may serve as a useful instrument for educational researchers in assessing the impact of interprofessional educational experiences.⁸ Furthermore, the SPICE instrument's ability to measure changes in perception for medical and pharmacy students exposed to an IPE experience has been documented in the literature.^{9,10} The SPICE-R instrument contains 10 items measured on a 5-point Likert scale ranging from “strongly disagree” (1 point) to “strongly agree” (5 points). Higher scores on the SPICE-R indicate a more positive perception towards interprofessional collaboration.

Overall SPICE-R scores were 4.38 ± 0.41 prior to the Interprofessional Falls Risk Assessment Program and increased to 4.62 ± 0.32 following the Program ($p = 0.013$). Examination of the individual items of the SPICE-R showed a mean score increase for two of the ten items (Table 2). Items 2 & 7, which assess the students' understanding of the roles and responsibilities for collaborative practice, were increased following participation in the Program.

When comparing the two student groups, there were no differences in overall SPICE-R scores between physical therapist and pharmacist students before and after the Interprofessional Falls Risk Assessment Program (Table 3). When considering the students attitudes toward interprofessional collaborative practice prior to and following the Interprofessional Falls Risk Assessment Program, physical therapy students agreed or strongly agreed (i.e., mean score ≥ 4) with 85% of items on the SPICE-R before the Program and 98% of the items following the program. Similarly, pharmacist students agreed or strongly agreed with 88% of items before the Program, and this percentage increased to 96% following the

Table 2
Comparison of pre- and post-program SPICE-R scores.

No.	Question	Pre-program	Post-program	P-value
	Overall Average SPICE-R Score	4.38 ± 0.41	4.62 ± 0.32	0.013
1	Working with another discipline of students enhances my education	4.56 ± 0.13	4.63 ± 0.13	0.705
2	My role within the interdisciplinary team is clearly defined	3.75 ± 0.14	4.31 ± 0.12	0.005
3	Health outcomes are improved when patients are treated by a team of professionals from different disciplines	4.81 ± 0.10	4.81 ± 0.10	1.000
4	Patient satisfaction is improved when patients are treated by a team of professionals from different disciplines	4.56 ± 0.16	4.81 ± 0.10	0.171
5	Participating in educational experiences with another discipline of students enhances my future ability to work on an interdisciplinary team	4.69 ± 0.15	4.69 ± 0.15	1.000
6	All health professional students should be educated to establish collaborative relationships with members from other disciplines	4.69 ± 0.12	4.81 ± 0.10	0.414
7	I understand the roles of other professionals within the interdisciplinary team	3.44 ± 0.22	4.38 ± 0.15	0.0008
8	Clinical rotations are the ideal place within their respective curricula for health professional students to interact	4.13 ± 0.20	4.19 ± 0.16	0.371
9	Health professionals should collaborate on interprofessional teams	4.63 ± 0.13	4.88 ± 0.09	0.103
10	During their education, health professional students should be involved in teamwork with students from other health professions in order to understand their respective roles	4.50 ± 0.16	4.69 ± 0.15	0.180

*Based on 5-point, Likert-type responses whereby 5 = Strongly agree, 4 = Agree, 3 = Neutral, 2 = Disagree, and 1 = Strongly disagree. Quantitative data were analyzed using Stata version 14.¹⁵ Paired t-tests compared the pre- and post-program SPICE-R data. Results demonstrating statistical significance ($p < 0.05$) appear in bold.

Table 3
Comparison of pre- and post-program scores between professions.

Profession	Pre	Post	Change
Doctor of Physical Therapy	4.28 ± 0.76	4.62 ± 0.52	0.35 ± 0.37
Doctor of Pharmacy	4.43 ± 0.73	4.62 ± 0.56	0.19 ± 0.33

Program.

6. Evaluation

The objective of the program was to evaluate whether participation in an Interprofessional Falls Risk Assessment Program altered the physical therapist and pharmacist students' attitudes toward interprofessional healthcare teams who work together to plan, coordinate, and/or deliver patient care and the team approach to care. The increase in overall SPICE-R scores for the entire group of participants demonstrated that this objective was met.

The Interprofessional Falls Risk Assessment Program itself was not formally evaluated other than the faculty and senior center staff agreeing the sessions were feasible to implement and engagement with community dwelling and senior living adults permitted the physical therapist and pharmacist students an opportunity to see each other's profession in action. During a debriefing following Session 3 at the local senior living facility, students provided feedback on the program. Responses to “what went well” were that the program helped broaden the students' views of patients beyond their own scope of practice, realizing that different professions may provide opposing recommendations to patients (e.g. physical therapy may assess the patient as a high risk for falls, while pharmacy may evaluate the same patient as a low risk for falls), and that working in a team may be best for patient care. In response to “what could be done differently next time” the students responded that a flyer with information about the program should be provided to the older adult participants prior to Session 3 as a reminder of their participation in the program.

7. Impact

The Interprofessional Falls Risk Assessment Program had a positive effect on the attitudes toward interprofessional collaborative healthcare practice of the physical therapy and pharmacy students. This is significant because interprofessional collaboration

plays an important role in developing a health care system that is of high quality, safe, patient-centered, timely, efficient, and equitable.¹¹ Health professions students are traditionally educated in “silos”, with little exposure to other health care professionals during their pre-licensure education. This Interprofessional Falls Risk Assessment Program provided a novel educational strategy for health professions students to learn with, from, and about each other, ultimately leading to collaborative-practice ready health care professions graduates. Collaborative-practice ready health professions graduates are especially important when working with the older adult population because many of these individuals have multiple chronic diseases. No one healthcare professional embodies all the specialized knowledge and skills required to effectively treat these complex patients, and thus the ability to effectively participate in an interprofessional team is of utmost importance for delivering quality care and improve patient outcomes.¹²

The elderly residents who participated in Session 3 had poorer balance evidenced by lower scores on the BBS than the volunteers evaluated in Session 2. Thus, the elderly residents were at a higher fall risk than the community dwelling older adults. These two populations of older adults provided the students with an opportunity to see a broad spectrum of functional ability and risk for falls associated with both medication use and balance impairments. In addition, an added benefit of Session 3 is that it was held in a relatively low income area of Buffalo, NY and catered to residents who were mainly of African American descent. Thus, this clinic aligned with the University at Buffalo's mission statement, “... dedicated to bringing the benefits of its research, scholarship and creative activity, and educational excellence to global and local communities in ways that impact and positively change the world”.¹³

Circumstances that may warrant the use of this Interprofessional Falls Risk Assessment Program educational strategy are health professions programs looking to positively impact students' perceptions of interprofessional collaboration and who would like to provide a pro bono fall risk assessment program to older adult community volunteers and residents of a senior living facility. This program serves as a unique experiential learning experience for students during their professional education. In addition, this program is a beneficial community outreach opportunity for professional education programs looking to positively impact the lives of at risk older adults. Although not a direct measurable objective of this clinic, fall risk assessments are positively regarded by elderly individuals as being helpful and informative.¹⁴ The fall risk assessments and recommendations provided in this program were intended to serve as action plans for the older adult participants to discuss with their primary care providers in order to reduce their

risk of suffering a detrimental fall.

Required materials

The SPICE-R survey instrument is available online at https://ne.xusipe-resource-exchange.s3.amazonaws.com/SPICE-R_Instrument.pdf.

The Berg Balance Scale is available online at http://www.aahf.info/pdf/Berg_Balance_Scale.pdf.

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