

Case Report

## Qualitative Evaluation of Interdisciplinary Service Learning Experience to Assess and Manage Fall Risk in Community-Dwelling Older Adults

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### Abstract

**Aim:** The purpose of this study was to evaluate faculty and student perceptions of a fall risk assessment and prevention activity for older adults offered in multiple community settings by health professional faculty and students.

**Background:** In the US, the percentage of adults 65 and older who fell was more than 29% in 2018. Among states, Arkansas ranks 48th with 35.2% of older adults reporting a fall (CDC Behavioral Risk Factor Surveillance System, 2018).

**Methods:** Four senior centers in Northwest Arkansas hosted a fall prevention awareness day planned and implemented by faculty in the departments of nursing, public health, physical therapy, exercise science, dietary, and social work in two universities. Materials from the



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Centers for Disease Control and Prevention (CDC) Stopping Elderly Accidents Deaths and Injuries (STEADI) initiative were used to train students as part of a service learning (SL) opportunity. The objectives of the interprofessional SL project were to (1) Improve student understanding of and satisfaction with interdisciplinary learning, (2) Increase the number of older adults assessed for fall risk, and (3) provide personalized fall prevention interventions. Students completed fall screenings, risk assessments, and referrals on 49 older adults in the four senior activity and wellness centers. This manuscript reports on the results of the qualitative study in which we surveyed faculty and students to determine their experience with the intervention and obtain their recommendations for improvement. Data were generated from faculty observations (n=6) and surveys completed by students (n=14) and analyzed using qualitative content analysis.

**Results:** Three themes describe the learning experience: learning fall prevention skills, organizing the fall prevention day, and engaging older adults in the community.

**Conclusions:** Based on our experience, an interprofessional education (IPE) activity focused on fall prevention in older adults is feasible. We recommend planning for the event far enough in advance that the experience can be included in the curriculum for students in the various disciplines. We also recommend that students be actively involved in the planning and implementation of the event.

### Keywords

Qualitative method; interprofessional education; multidisciplinary; professional practice; older adults; fall prevention

## 1. Background

Falls are the leading cause of injury related morbidity and mortality among older adults [1]. To estimate the rates of falls among older adults by state, the Centers for Disease Control (CDC) analyzed data from the 2016 Behavioral Risk Factor Surveillance (BRFSS) survey. In 2016, 29.5% of older adults reported falling. Among states, the percentage of older adults who reported a fall ranged from 20.8% in Hawaii to 34.3% in Arkansas [2].

Falls result in disability, institutionalization, and mortality and are the leading cause of fatal and nonfatal injuries among adults aged 65 and older [1, 3]. The overall rate of older adult deaths from falls increased 31% from 2007 to 2016 at a rate of three percent per year. A significant increase in the rate from 2007 to 2016 occurred in 30 states, including Arkansas [2]. In 2015, the estimated medical costs attributed to fatal and nonfatal falls was approximately \$50.0 billion [4]. Most of the cost was attributable to care for nonfatal falls paid by Medicare, Medicaid, and other payors [1].

As the population of older adults in the United States increases, the rising injuries and deaths from falls can be addressed by screening for fall risk and addressing risk factors such as gait, strength, and balance issues or polypharmacy. Despite evidence that interventions based on high quality reviews and clinical guidelines can reduce the rate of falls by as much as 25% [5], diffusion of assessment and management practices into the clinical setting remains challenging, and there is evidence that uptake/engagement rates by older adults are less than 50% [6].

The CDC developed STEADI to help healthcare professionals address falls in older adults. The three core components of STEADI include screening older adults for fall risks, assessing modifiable risk factors, and intervening to reduce risk by using evidence based clinical and community strategies. The toolkit consists of the STEADI Algorithm for Fall Risk and Assessment and Interventions; a self-risk assessment for the older adult; fact sheets on fall prevention, medications, and home modifications; and instructions on how to perform the screening tests. The toolkit is available on the CDC website in the STEADI section [7].

The challenge of fall prevention emphasizes the need for all health professionals working with older adults to be trained and to develop IPE to support collaborative care in the community. The Center for the Advancement of Interprofessional Education [CAIPE] [8] defines IPE as “occasions when two or more professions learn with, from, and about each other to improve collaboration and the quality of care.” A review of literature indicates that IPE has the potential to enhance attitudes, knowledge, skills, and behaviors for collaborative practice. Evidence also suggests that IPE results in improvements in clinical practice and patient outcomes [9].

Several studies have demonstrated that an interprofessional approach to fall risk assessment and prevention provides an effective learning strategy for health professional students caring for older adults. Sullivan et al. [10] reported on the development of a community fall prevention IPE event. Post-event findings indicate that students valued working in interprofessional teams and the community service event provided a useful approach for incorporating fall prevention into the curricula of nursing, pharmacy, physical therapy, and physician assistant programs. Mercer, Zimmerman, Schrodt, Palmer, and Samuels [11] described implementation of a community fall prevention project called the Community Health and Mobility Partnership (CHAMP). Nursing students, physical therapy students, and emergency service personnel conducted screenings for fall risk and provided individualized recommendations to community residents over a period of two and a half years. Students reported that the experience provided opportunities to learn about the needs of older adults living in rural communities and about the roles of other health professionals [11]. Nordon-Craft et al. [12] investigated the impact of SL on physical therapy students’ ability to examine fall risk in older adults. One cohort of students designed and implemented the SL activity and a second cohort only implemented the activity. All students’ self-reported confidence levels for assessing and managing fall risk in older adults increased. Students in the cohort that was involved in designing the SL demonstrated a significant increase in their comfort evaluating older adults. McKenzie et al. [13] described a project where an interprofessional teaching team supported interprofessional practice teams to reduce falls in older adults by implementing evidence based practice guidelines. The participants reported increases in knowledge, skill performance, and commitment to change practice. Taylor et al. [7] reported on a fall prevention IPE activity using the CDC STEADI tools. An improvement in student knowledge of fall prevention and STEADI was observed.

The purpose of this study was to evaluate faculty and student perceptions of the community based fall prevention program and obtain their recommendations for improvement.

## **2. Methods**

An expert reference group comprised of faculty from nursing, physical therapy, social work, exercise science, nutrition, and public health designed the educational intervention based on

recommendations from the American and British Geriatrics Societies' clinical practice guidelines and the core elements from the STEADI Initiative. The disciplines involved represent three colleges and two universities located on separate campuses in NW Arkansas.

The desired outcomes of the SL project were to (1) Improve student understanding of and satisfaction with interdisciplinary approach to learning, (2) Increase the number of older adults in Northwest Arkansas assessed for fall risk, (3) Increase interdisciplinary education of older adults in personalized fall prevention strategies based on results of fall risk assessments. Student training focused on application of the STEADI toolkit including gait, strength, and balance tests; home safety; and review of medications.

The event was originally scheduled to occur on the National Council on Aging Fall Prevention Awareness Day (2019) [14] in September. However, the event was cancelled due to inclement weather and rescheduled for the first Friday in February. Community dwelling older adults were recruited locally via flyers and word of mouth at the senior centers.

On the day of the event the following stations were set up at each of the senior centers:

- Greeting, Check-in & Orientation
- General intake information and fall risk questionnaire
- Vital Signs & foot check
- Medication Review
- Balance assessments
- Brain games
- Home Safety
- Exercise Counseling and Education
- Nutrition
- Social Work & Physical Therapy
- Exit Interview and Consent for follow-up

A student escorted each of the older adult participants through the stations.

To evaluate this educational intervention, faculty (n=6) were interviewed about their experience. All participating students (n = 40) were asked to complete a survey that consisted of three questions: what did you think went well at the event, what did you think needed some improvement at the event, any further comments or suggestions? The fourteen students who agreed to answer the open ended questions voluntarily were included in the purposive sample.

Upon review of the evaluation, interesting themes emerged that indicated that secondary analysis of the data could inform further research. Approval was obtained from the university institutional review board. Qualitative analysis began with a thorough reading of the data. A table of initial codes was created and the most significant or frequent were sorted into potential themes [15]. Themes were identified and data was extracted to illustrate and support the themes.

### **3. Results**

Forty-nine older adults in four senior and wellness centers in Northwest Arkansas were assessed for fall risk and provided with information on how to prevent falls. Six faculty members were interviewed and 14 students completed surveys in order to evaluate their perceptions of the community based fall prevention program.

Three main themes emerged from the interviews and surveys: learning fall risk and prevention skills, organizing the fall prevention day, and engaging older adults in the community.

### **3.1 Learning Fall Risk Assessment Skills**

Faculty and students highlighted the value of learning fall prevention skills. Faculty agreed that engaging students from different professional backgrounds to work with older adults in their communities provided high quality care. A need and desire to continue IPE learning activities was expressed by the faculty.

Students felt that they were well prepared on how to perform a falls risk assessment. They appreciated the opportunity to practice the STEADI tests and to talk to the older adults in the community setting.

*I think the groups were well trained to perform their tests and measures (p 13).*

*...overall, the program did a great job at administering tests and educating patients on their specific needs based on those tests (p 1).*

### **3.2 Organizing the Fall Prevention Day**

The challenge of bringing students together from different universities and departments was noted by faculty. Limited resources such as space, time, and faculty for IPE present barriers, with time identified as the major barrier to participation. Because this IPE was an “added” educational activity in already packed curriculums, there were difficulties aligning clinical placement schedules for participation. When the event was rescheduled, nursing and public health students had already been assigned to classes or clinical rotations that could not be moved.

Over half of the student participants felt that the event could have been better organized with a more defined flow of tests and activities for the older adults.

*...we had a hard time making a flow that worked since the cognitive screening took so long (p 9).*

*The disorganization was probably because it got rescheduled (p 11),*

Students expressed concerned about the amount of paperwork the older adults were required to complete. The older adults were asked to complete forms and questionnaires in order to obtain a medical history including information about medications and functional status.

*many older adults were surprised on how long it took and the amount of paperwork (p 5)*

Students commented that some of the older adult participants were not aware of the purpose of the event.

*...they didn't know the day was supposed to benefit them. They showed up thinking they were helping us collect data for research (p 5).*

*we were in a backroom of the building so a lot of people didn't even realize that the event was taking place (p 1).*

### **3.3 Engaging Older Adults in the Community**

Both faculty and students felt that a valuable service was provided to achieve community goals. Faculty members were pleased that many older adults were assessed for fall risk and referred for

services in the community. Student participants commented that the event provided an opportunity for enhanced community-university relations, which can open other opportunities for collaborative work.

*Many people participated in our screenings which hopefully helped them to understand how to prevent falls (p 1).*

*I think this event should keep going as it benefits the community and gets the ...name out there in a positive way (p 9)*

#### **4. Discussion**

The high number of falls reported in community dwelling older adults and the potential for injury highlight the need for healthcare professionals to be skilled in fall risk assessment and interventions. However, providing learning experiences that help students gain competence in managing older adults at risk for falls and increases their interest in working with this population is challenging [12].

There is some evidence indicating that fall prevention focused IPE may be effective in preparing health professions students to care for older adults are consistent with the literature [7, 10-13]. An unexpected finding from our study is that the students did not reflect, either negatively or positively, on their experience working in interprofessional teams. Given the current impetus for IPE in healthcare profession curriculum and evidence that it can impact professional practice and the health of older adults, this finding provides support for introducing IPE at the beginning of healthcare students' education and a program of IPE teaching strategies introduced throughout training in order to better prepare them for interprofessional learning and practice.

We plan to continue this interdisciplinary fall prevention day as an annual event. Recommendations for future events include planning far enough in advance that clinical schedules can be aligned, making sure all students are trained and can demonstrate competency in the skills based on the STEADI program, and working with community partners to make sure older adults are aware of the activity.

Students brought forward the concern about asking the older adults to complete a lot of paperwork. We believe that we need to be flexible when obtaining information from older adults and make efficient use of their time. In the future, we will consider gathering preliminary data before the session. We will try to structure questionnaires for easy reading by using larger type and providing plenty of space between items for people to respond. We might also consider the use of scribes for completing some of the questionnaires.

Nordon-Craft and colleagues (2017) [12] suggest that involving the students in all aspects of the service learning experience, including the planning, increases their ownership in the process and improves student learning. Our data included comments from students that indicated that they are knowledgeable about how to organize a service learning event. Thus, we recommend that students be involved in the planning of future events.

#### **5. Limitations**

The evaluation of the SL event focused on assessing the faculty and student experience with the event. Measuring behavioral change among participants and outcomes for older adults was beyond the scope of this phase of the study. There are several limitations worth noting. The

student surveys were not tested for content or face validity and students from only two academic programs completed them. However, findings will be considered as the intervention is modified. Future investigations are planned in order to formally evaluate the effectiveness of IPE and SL on student learning through use of validated assessment tools such as the Readiness for Interprofessional Learning Scale and the Interdisciplinary Education Perception Scale [16].

## **6. Conclusions**

Based on our research, a multidisciplinary service learning activity focused on fall prevention in community dwelling older adults using the CDC's STEADI methodology is feasible. The SL event was found to be effective by faculty and students. The pilot phase helped identify practical implementation issues. The participating health discipline programs plan to continue to offer this event annually.

## **Author Contributions**

Patton – planning the intervention, data analysis, writing the manuscript, revision; Vincenzo – planning and implementing the intervention, data collection; Bennett – data collection; Gray – planning and implementing the intervention, revision; Henry – planning and implementing the intervention, revision; Ferguson – planning and implementing the intervention; Dibrezzo – planning and implementing the intervention; Walter – planning and implementing the intervention; Kelly – planning and implementing the intervention.

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## **Competing Interests**

The authors have declared that no competing interests exist.

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