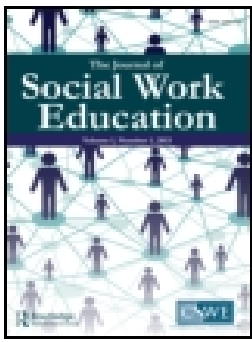Fall 2019

Breaking Out of the Silo: A Systematic Review of University-Level Gerontological Curricula in Social Work and Nursing Programs

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ABSTRACT

Interprofessional collaborations in the United States, have emerged as a means to improve health care outcomes and reduce costs. Such collaborations may be especially beneficial in the field of gerontology, given widespread chronic conditions and high health care utilization rates among this population. Currently, there is a shortage of graduates prepared to engage in interprofessional practice with older adults. This article discusses gerontological-focused interprofessional initiatives within social work and nursing education. Twenty-four scholarly articles were reviewed and categorized into three themes: (a) program descriptions, (b) evaluation of programs, and (c) student and faculty experiences. Following a description of the articles in each theme, the authors provide a discussion of current gaps and future directions for gerontological education and research.

It is well-known that the United States is experiencing a dramatic aging of its population, due in part to the aging of the Baby Boomers as well as medical advances that have increased life expectancies (Christensen, Doblhammer, Rau, & Vaupel, 2009). By 2050, the number of persons aged 65 and older will reach 83.7 million, almost double what it was in 2012 (Colby & Ortman, 2014). Older adults often have multiple chronic health conditions and use health care at high rates, and this disease burden has important implications for the health care system (Dall et al., 2013). Recent health care policies in the United States, including the Affordable Care Act, have emphasized the importance of interprofessional practice (IPP) to obtaining better health care outcomes and reducing costs (Young et al., 2011). As a result, interest in interprofessional education (IPE) among health care professions has grown in recent years (Interprofessional Education Collaborative [IPEC], 2016; Jones & Phillips, 2016; Levit, Balogh, Nass, & Ganz, 2013). Despite this interest, a strong understanding of what is being done to infuse IPE and the needs of older adults into university-level curricula remains unclear.

Interprofessional education

While there are several definitions of IPE in the literature, one that is most often cited comes from the Center for the Advancement of Interprofessional Education (CAIPE). This is defined as:

> [Involving] educators and learners from 2 or more health professions and their foundational disciplines who jointly create and foster a collaborative learning environment. The goal of these efforts is to develop knowledge, skills and attitudes that result in interprofessional team behaviors and competence. Ideally, interprofessional education is incorporated throughout the entire curriculum in a vertically and horizontally integrated fashion. (Buring et al., 2009, p. 21)

Buring et al. (2009) also highlighted that IPE is not simply students from different professions taking a class together, faculty from a different profession leading a course or class, or students engaging in patient care experiences led by another profession (Buring et al., 2009). Rather, IPE spans the entire

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curriculum and requires meaningful interactions among professions and reflection about how to work together, as part of a team, with the goal of improving patient care.

Several educational associations, including Council on Social Work Education (CSWE), have formed or joined the IPEC (2016) and detailed core competencies. The four competency domains are: (1) values and ethics for IPP, (2) roles and responsibilities, (3) interprofessional communication, and (4) teams and teamwork (IEC, 2016). Competency one, values and ethics, involves working with other professionals to foster and maintain a climate of shared values and mutual respect. This includes embracing the diversity and differences that make up the team and respecting the expertise that different professions bring to the team and care of the patient. Competency two, roles and responsibilities, involves utilizing the expertise of various professions appropriately, with a clear understanding of each professional's roles and abilities. It also calls for engaging diverse professionals who complement one another's expertise, enhance the team, and, ultimately, the health and health care of patients and populations served. Competency three, interprofessional communication, refers to the responsive and effective use of communication strategies to facilitate and enhance team functions. It also includes giving feedback and encouraging sharing of ideas and opinions by all members of the team. The fourth and final competency domain, teams and teamwork, involves working collaboratively and applying relationship-building strategies such as coordination, consensus-based decision making, and shared accountability. It is important to highlight that all four competencies promote practice that is grounded in the following principles:

> patient and family centered; community and population oriented; relationship focused; process oriented; linked to learning activities, educational strategies, and behavioral assessments that are developmentally appropriate for the learner; able to be integrated across the learning continuum; sensitive to the systems context and applicable across practice settings; applicable across professions; stated in language common and meaningful across the professions; and outcome driven. (IEC, 2016, p. 10)

These principles, along with the four competencies and their respective subcompetencies, aim to inform the development of IPE curricular goals and are all well-aligned with values of the social work profession.

Interprofessional education and social work

Support for IPE has been widely recognized, with entities such as the World Health Organization (WHO), the American Public Health Association, and the Institute of Medicine (IOM) all calling for increased efforts to improve IPP through educational efforts (CEPH, 2011; IOM, 2008; WHO, 2010). As a profession, social work has also expressed its commitment to IPE and IPP. This is most evident in the CSWE *Educational Policy and Accreditation Standards*, where core competencies (e.g., 1, 6, 7, and 8) make mention of the need for social workers to understand the role of other professions and be prepared to collaborate in various aspects of practice such as assessments and intervention at micro, mezzo, and macro levels (CSWE, 2015). Social work's commitment to IPE has also been carried out via the CSWE Gero-Ed Center, an aging-specific social work initiative designed by gerontological social work faculty and students nationwide and funded by the John A. Hartford Foundation (CSWE, n.d.). This collaboration was aimed at advancement and sustainability of educational efforts to prepare social workers with gerontological competencies (Hooyman & Diwan, 2009). The Gero-Ed Center provides educators and practitioners with valuable tools and resources for infusing gerontological content into social work courses and appears to have been successful (CSWE, n.d.). However, despite successes, the focus of the initiative was on infusing gerontology content only, rather than IPE more broadly. Furthermore, the primary funding for this initiative ceased in 2015 (CSWE, n.d.).

Given the shifts in health care practice and the growth of the older adult population, there is increasing demand for social workers entering the field to be prepared to practice both with older adults and within health care settings. According to the Bureau of Labor Statistics (2017), employment of health care social workers is projected to grow by 20% in the next 10 years. Currently, there is a shortage of social workers who have received formal training in gerontology, and only 9% of

licensed social workers report aging as their primary area of practice (Lustig, 2013; Whitaker, Weismiller, & Clark, 2006). In addition, challenges implementing IPE within social work curricula are well-documented (e.g., Anderson & Kanter, 2010; Angelini, 2011; Buring et al., 2009). Growing evidence suggests that skilled collaborations in health care teams positively affect health care outcomes such as quality of care, and that collaborations are particularly important in geriatrics, where patients often present with complex needs (Levit et al., 2013; Young et al., 2011). Therefore, there is a critical need to understand how social work has responded to this need and the educational efforts that have been developed to integrate IPE into the education of gerontological social workers and to ensure their graduates are prepared for interprofessional practice.

Significance and purpose of the study

IPE is instrumental to prepare program graduates for gerontology practice within the current collaborative context of health care. The collaborative efforts between social work and other programs (e.g., nursing, medicine) have not yet been systematically examined. Identifying such collaborations, especially with nursing, is particularly important. Nursing collaborations are singled out in this review given the close working relationships between nursing and social work that are often required when working with the older adult population (Chan, Chi, Ching, & Lam, 2010). A better understanding of the state of gerontology-focused IPE collaborations is necessary to illuminate gaps and future directions. As such, the purpose of this study was to provide a systematic review of the literature on gerontological education programming within and between social work and nursing programs in the United States over the past 10 years.

Methods

Search strategy

Authors used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Moher, Liberati, Tetzlaff, Altman, & PRISMA Group, 2009) guidelines to conduct a systematic review of the databases. The authors searched for articles in the following databases: Academic Search Complete, AgeLine, CINAHL Complete, Education Administration Abstracts, MEDLINE, PsycInfo, and Social Work Abstracts, accessed through EBSCO and ProQuest. Search terms included varying combinations of the following keywords: *social work*, nurs* education, nursing education, collaboration, interdisciplinary, interprofessional, multidisciplinary, geriatric, gerontology*, and *gerontological*. The asterisk was placed at the end of the search terms "social work" and "nurs" to retrieve any articles with iterations of this root term (e.g., social worker, nurse and nursing student). To be included in the review, articles had to meet the following criteria: (a) be published in scholarly, peer-reviewed journals, (b) examine interprofessional gerontological education programming within higher-education in the United States, and (c) explicitly include social work and nursing professions. Articles were excluded if they were published in a language other than English or prior to January 1, 2007. Articles were also excluded if they discussed programs or universities outside the United States, since those fall outside the accrediting authority of the CSWE and may not be bound by the same standards.

Article selection

The initial search yielded a total of 1,612 articles. On duplicate removal, 1,453 unduplicated article titles were screened for eligibility. A three-stage review process was used to determine whether or not articles should be included in the review. During the first stage, the reviewers excluded 910 articles based on their title. During the second stage, the abstracts of the remaining 543 articles were read, and an additional 436 articles were excluded. Last, stage three involved reading the remaining 107 articles in full. Following full readings, 83 articles were excluded. These articles discussed initiatives

outside the United States or initiatives not focused on gerontological practice. This resulted in 24 articles in the final sample. Figure 1 outlines the article selection process.

Article review

Two reviewers independently screened, assessed, and cross-checked the final sample of articles (N=24) for inclusion criteria. Researchers consulted each other continuously, using Google Drive to note questions and ideas, and develop the emergent themes. Discrepancies and disagreements in themes were discussed and resolved via e-mail communication, based on consensus. An audit trail, using the same cloud share system, was kept to document decisions at various stages of the research. On agreement on three overall themes, articles were divided and reviewed independently. Reviewers also extracted details regarding initiatives, article design, setting, sample, and main findings onto a table during this stage.
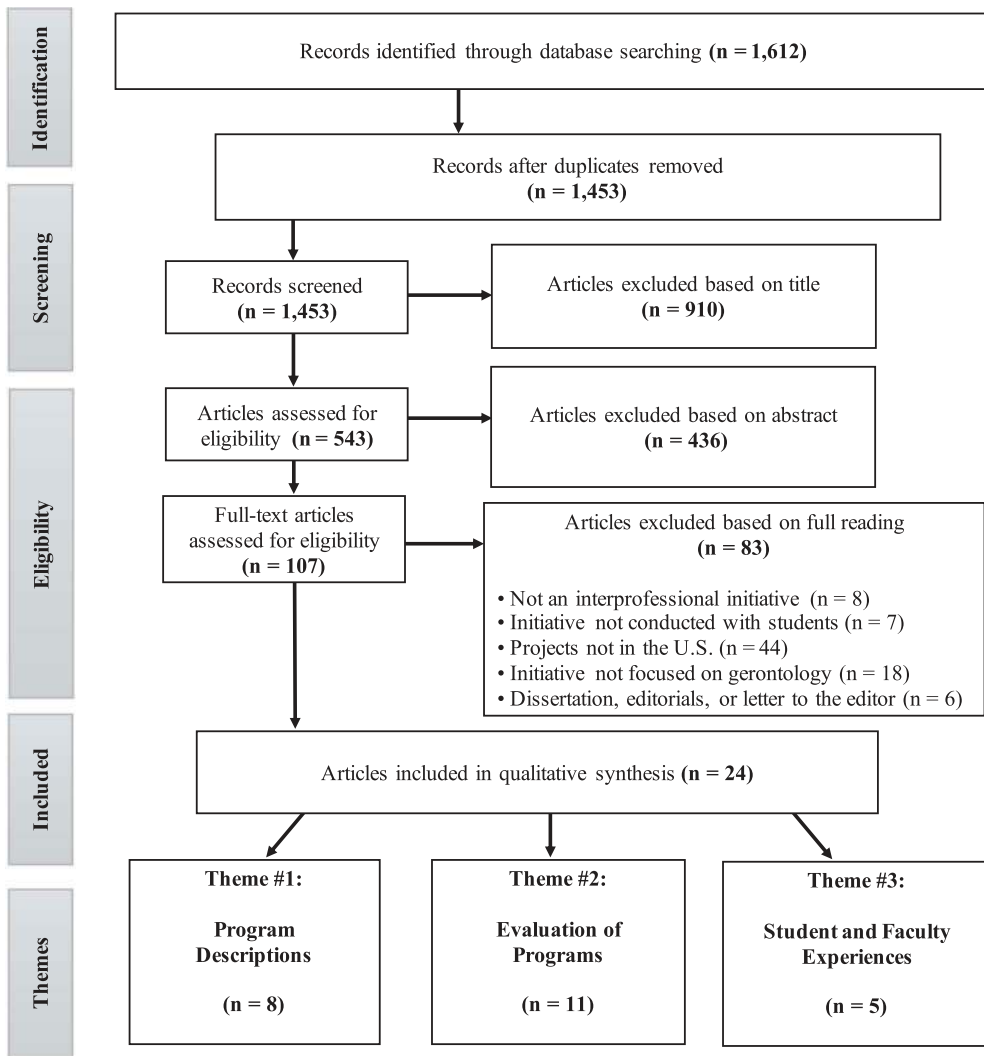

Identification

Records identified through database searching (**n = 1,612**)

Records after duplicates removed
(**n = 1,453**)

Screening

Records screened
(**n = 1,453**) → Articles excluded based on title
(**n = 910**)

Articles assessed for
eligibility (**n = 543**) → Articles excluded based on abstract
(**n = 436**)

Eligibility

Full-text articles
assessed for eligibility
(**n = 107**) → Articles excluded based on full reading
(**n = 83**)

• Not an interprofessional initiative (n = 8)
• Initiative not conducted with students (n = 7)
• Projects not in the U.S. (n = 44)
• Initiative not focused on gerontology (n = 18)
• Dissertation, editorials, or letter to the editor (n = 6)

Included

Articles included in qualitative synthesis (**n = 24**)

Themes

Theme #1:	Theme #2:	Theme #3:
Program Descriptions	**Evaluation of Programs**	**Student and Faculty Experiences**
(**n = 8**)	(**n = 11**)	(**n = 5**)

Figure 1. PRISMA flowchart of article selection process.

Results

The articles were categorized into three overarching themes related to interprofessional education for gerontological–social work and nursing students: (a) program descriptions, (b) evaluation of programs, and (c) student and faculty experiences. Below is a summary of the publications, including descriptions of the articles' design and samples and findings organized by theme.

Summary of publications

A total of 24 articles were included in the final review. The PRISMA flow chart shown in Figure 1 illustrates the article selection process. Eighteen of the 24 articles discussed empirical research. These studies were most often mixed-methods (10), and quantitative (6) and qualitative (2) methods, respectively. The seven remaining articles included in the review were conceptual papers, including one state-of-the-science report (Damron-Rodriguez, 2008). The majority of articles reported student participants (e.g., in need assessments, courses, field practice, simulations). However, one study was conducted with university faculty only (Dorfman, Murty, Ingram, & Li, 2008). The three themes related to interprofessional gerontological education efforts in U.S. higher education are described below.

Program descriptions

Eight articles described initiatives or efforts that were developed to prepare students from interprofessional fields (including social work and nursing) for collaborative practice with older populations. Hermann, Head, Black, and Singleton (2016) and Rowan et al. (2009) focused on an in-depth description of the development and implementation process of gerontological education, and further expand on challenges, lessons learned, and recommendations for universities implementing similar programs. The remaining six articles focused on details of interprofessional programs, which included descriptions of the fields represented, goals, and outcomes measured. Across the programs, there was variety in terms of delivery of program initiatives, departments to spearhead such initiatives, and the length of time that the interprofessional gerontological programs were offered. For example, Ellman et al. (2012) described a gerontological program offered online utilizing Web-based tools in a virtual-classroom, Supiano (2013) discussed a course implemented as a collaboration between faculty from departments mirroring the students involved, and De Los Santos, McFarlin, and Martin (2014) and Kolomer, Quinn, and Steele (2010) described service learning projects. Kolomer et al. (2010) and Rowan et al. (2009) described multiuniversity partnerships. All other programs were housed in departments of social work (Poole et al., 2013), nursing (Hermann et al., 2016), physician assistant (MacRae & Pardue, 2007), and medicine (De Los Santos et al., 2014; Ellman et al., 2012). The course described by Supiano (2013) had been offered six times at the time of publication, and Poole et al. (2013) project had been implemented for 6 years. It is important to note that Poole et al.'s project was the only one in this theme that did not include students from other fields. Rather, the program exposed BSW and MSW students to interprofessional practice by partnering them, as part of their field work, with congregational nurse professionals. De Los Santos et al., Kolomer et al., and Poole et al. all described service learning projects involving partnerships with community agencies serving older adults.

In summary, the articles in this theme focus on describing university-level interdisciplinary initiatives between social work, nursing, and allied health professions. Some describe the development of the collaboration and of the curriculum, and others share their experiences with implementation and evaluation of the programs. More details about the articles included in this theme, including project or curricula names, are provided in Table 1.

Table 1. Program Descriptions (n=8)

Authors (year)	Program	Professions	Outcomes Content	Outcomes Format	Key findings and recommendations
Poole et al. (2013)	1. Congregational Social Work Education Initiative (CSWEI) 2. Article describes implementation of program over the last 6 years. 3. Program prepares students to work with congregational nurses serving persons 55+.	1. Student-nurse teams 2. Six BSW-level and six MSW-level students each round of the program.	1. Forty-one CSWE practice behaviors for BSW students and 17 for MSW students. 2. Topics include overview of mental illness and substance abuse, healthy aging, biopsychosocial aspects of aging, and working in a multidisciplinary environment.	1. Self-assessment of confidence with core competencies 2. Pre–post test	1. Social work students work closely with the congregation's nurse to coordinate services for clients. 2. All students who participate in the program rate their level of competency with a number of practice behaviors highly, especially with communicating professional judgment. 3. Students do well on CSWE competencies 3 and 5.
Hermann et al. (2016)	4. iCOPE 5. Article describes program development and implementation. 6. Program prepares students for palliative care practice.	7. Total students served over 2 years of implementation: 8. BSN level (253) 9. Medicine (186) 10. MSW level (71) 11. Chaplaincy (34)	12. Content guided by IPEC competencies 13. Readiness for interprofessional learning and end-of-life professional caregiver skills.	14. Pre–post tests using standardized scales (reported elsewhere)	15. Didactic modules were developed based on cases and problem-focused teaching methods, to provide clinical experience and give the students the opportunity to work as members of an interdisciplinary team (IDT). 16. Formative project evaluations are ongoing, and findings reported elsewhere.
MacRae and Pardue (2007)	17. Interdisciplinary Geriatric Education Program (IGEP) 18. IGEP uses Readers Theater as an instructional strategy to teach an interdisciplinary group of students.	19. Physician assistant 20. Dental hygiene 21. Social work 22. Nursing 23. Dentistry 24. Occupational therapy 25. Levels of students (grad vs. undergrad) varied each time.	26. Team functioning, communication and conflict resolution.	27. Student feedback	28. Students reported that the theater intervention allowed them to appreciate the perspectives and goals of professionals from other disciplines. 29. Students also reported that the course helped them become a champion for their profession and understand the value of interdisciplinary work.

Table 1. (Continued).

Authors (year)	Program	Professions	Outcomes		
			Content	Format	Key findings and recommendations
Ellman et al. (2012)	30. Program consisting of an online interactive, case-based module and a live simulation workshop created to teach an interdisciplinary group of students about palliative care.	31. Medicine 32. Chaplaincy 33. MSW level 34. Graduate-level nursing	35. 5 objectives: goals of palliative care; opioid misconceptions; spiritual and cultural needs; clinical features of imminent death; and understanding of interdisciplinary team roles.	36. Two-hundred and eleven total student reflections. 37. Three-hundred and nine student questionnaires using Likert scales to evaluate program.	38. Qualitative data indicated that all students understood each other's roles, and valued team efforts. 39. Student feedback also showed they found the program useful and educational (mean of 4/5 on Likert scale). 40. Authors recommend future testing of intervention in other educational settings.
De Los Santos, McFarlin, & Martin (2014)	41. Green Family NeighborhoodHELP. 42. Article describes a longitudinal, interprofessional, service-learning program that prepares students for community-based practice.	43. Medicine 44. BSW level 45. MSW level 46. Law 47. BSN level 48. Graduate- level nursing 49. The faculty and student makeup is also diverse.	50. Guided by Interprofessional Education Collaborative competencies (IPEC). 51. Concepts of team work, communication, professionalism, and critical thinking.	52. Ongoing feedback from students and community members receiving care regarding the program.	53. The program has focused specifically on improving health outcomes of medically underserved communities. 54. Student teams conducted over 1,777 home visits to over 248 households in a 2-year period. 55. Students engage in case presentations to a diverse faculty group.
Supiano (2013)	56. Article describes a graduate course teaching interdisciplinary palliative care practices.	57. Graduate- level nursing 58. Pharmacy 59. MSW-level students 60. Gerontology 61. The course is taught by faculty from the same disciplines.	62. Core palliative care knowledge 63. Roles of each discipline in a palliative care team	64. Discussions, post-course focus groups, and in-team projects and group performance used to evaluate.	65. The students showed that they gained knowledge about their own and each other's disciplines' roles in palliative care. 66. The author recommends that the course be further developed and replicated, including students from other fields who are represented in palliative care teams.

(Continued)

Table 1. (Continued).

Authors (year)	Program	Professions	Outcomes		Key findings and recommendations
			Content	Format	
Kolomer et al. (2010)	67. Service learning project consisting of health fairs for the promotion and screening of older adults at community centers. 68. Collaborative effort between two universities, students, and community senior centers.	69. BSN level 70. Graduate-level nursing 71. BSW level 72. MSW level	73. Attitudes toward interprofessional learning 74. Teamwork and collaboration 75. Negative professional identity 76. Positive professional identity	77. Two-page questionnaire to evaluate their interprofessional learning experience. 78. Readiness for Interprofessional Learning Scale questionnaire (3/4 subscales used).	79. Students chose their desired booth to work at the health fair, under their professor's guidance. 80. Although students expressed strong identification with their own professions, they had a high willingness to share and learn skills of other disciplines. 81. Student scores also demonstrated that learning the value of interdisciplinary communication was helpful.
Rowan et al. (2009)	82. Evidence-based Geriatric Evaluation and Self-Management Services (GEMS) project, which serves community-dwelling older adults. 83. Article describes the process of implementing GEMS as well as challenges and lessons learned.	84. Bachelor's- or master's-level PT students (17) 85. MSW-level students (22) 86. MSW-level professionals (14) 87. Minimum bachelor-level PT professionals (13)	88. Geriatric assessments 89. Health self-management 90. Telehealth	91. True/false and multiple-choice online module tests 92. Two modules of the Geriatric Social Work Competency Scale II	93. Students stated they had positive experiences and appreciated the service delivery method. 94. Authors discuss obstacles faced in interdisciplinary training, service delivery, and project evaluation. 95. Authors conclude that the initiative can be replicated in other universities to improve educational outcomes.

Evaluation of programs

Eleven of the 24 publications discussed empirical studies evaluating the effectiveness of IPE programs. The majority of the program evaluations identified used mixed-methods (6), followed by quantitative (4) and qualitative designs (1). The programs being evaluated varied in their approach to the educational interventions. Some were case simulations or scenarios (Heuer, Geisler, Kamienski, Langevin, & O'Sullivan, 2010; Murphy & Nimmagadda, 2015) using students, faculty, or actors (Forrest & Derrick, 2010). Heuer et al. (2010) is the only evaluation in this review that did not include students from multiple fields. Instead, medical students participated in simulations, with all other roles played by interprofessional faculty. Heflin et al. (2014) included faculty from multiple fields, including social work but were unable to enroll a social work student in the course. Despite this, social work students were among the intended audience. Aiguier, Oboeuf, Cobbaut, and Vanpee (2015) tested the effectiveness of activity confrontation as an educational approach. Students from nursing, medicine, social work, and physiotherapy working in field placements were filmed performing various activities and asked to analyze the recordings. Other initiatives used more traditional approaches, such as seminars (Chan, Mok, Po-ying, & Man-chun, 2009), teaching sessions/courses (Head et al., 2016; Heflin et al., 2014), and real-life practice experiences in field (Conti et al., 2016; Sheppard et al., 2015).

Interventions also differed in terms of participants, gerontological topics of focus, and aims. In addition to nursing and social work fields required for inclusion in this review, many initiatives involved medical; occupational, physical, and speech therapy; pharmacy; and nutrition students (e.g., Conti et al., 2016; Park, Hawkins, Hamlin, Hawkins, & Bamdas, 2014). Some initiatives also included students from other fields that often work with older adults. For example, Sheppard et al. (2015) included students from dentistry and optometry fields, and both Head et al. (2016) and Forrest and Derrick (2010) included chaplaincy and clergy students, respectively.

While all initiatives targeted gerontological interprofessional practice, some focused specifically on enhancing competencies associated with a particular area or setting of practice. For example, Forrest and Derrick's (2010) program aimed to introduce students to end-of-life care, and findings suggested that it helped confirm or generate students' desire to work with terminally ill patients. Similarly, Head et al.'s (2016) intervention focused exclusively on improving interprofessional practice in palliative care, and Conti et al. (2016) and Sheppard et al. (2015) focused on improving collaborations within nursing homes and during home visits. In addition to the topic or setting-specific initiatives, all initiatives shared the goal of preparing students for interprofessional collaborations. To this end, educational initiatives focused on helping students understand each other's roles within the interdisciplinary team and develop a sense of appreciation for team-based practice (Heuer et al., 2010). Others focused on improving students' attitudes and preparedness for interprofessional teamwork (Bonifas & Gray, 2013; Conti et al., 2016; Heflin et al., 2014; Park et al., 2014) and developing caring dispositions in students (Chan et al., 2009).

In summary, the articles in this theme disseminate findings to the academic community based on evaluations of their programs. The research designs, constructs measured, and data collection methods varied. Most studies reported that their educational initiatives were successful in achieving some or all of the aims, and some also discussed challenges and recommendations for future renditions of the initiatives. More details about the articles in this theme, including a description of methods, participants, outcome measures, and findings, are provided in Table 2.

Student and faculty experiences

Descriptions of nursing and social work students and faculty responses and experiences related to the IPE collaborations were emphasized across five articles included in the final sample. Students who participated in these IPE programs reported gaining a broad perspective of aging and working with older adult populations (Brooks, Fox, & Okagbue-Reaves, 2009). In one study assessing student

Table 2. Evaluation of Programs (n=11)

Authors (year)	Methods	Professions (sample)	Outcomes — Content	Outcomes — Format	Key findings and recommendations
Aiguier et al. (2015)	1. Qualitative evaluation of the effectiveness of an activity confrontation educational framework to develop an interdisciplinary education training program. 2. Data evaluated using an inductive discourse analysis informed by grounded theory.	3. Nursing (3) 4. Medicine (1) 5. Social work (1) 6. Physiotherapy (1) 7. Students selected regardless of program level.	1. Self-confrontation (by students of their recorded activity) 2. Collective confrontation (students/qualified professionals).	1. Films and transcripts analyzed 2. Change in time allocation to each type of confrontation assessed.	1. The methods proposed encouraged reflexive analysis of the motives for choosing interprofessional behaviors. 2. Findings also showed that the patient role must be considered when developing an interprofessional learning program and care. 3. The authors emphasize the importance of students meeting the patients, which helped motivate them for interprofessional collaborations.
Head et al. (2016)	4. Pre–post mixed-method evaluation of a university's efforts to design and implement an interdisciplinary curriculum (iCORE) to teach palliative care in oncology. 5. The curriculum includes online case-based didactics, an Interdisciplinary Case Management Experience (ICME), clinical rotations, and critical reflection activities.	6. Chaplaincy 7. BSN level 8. Medicine (fourth year) 9. MSW level 10. 373 students completed pre–posttest over five semesters.	11. Confidence with interprofessional education 12. Palliative care knowledge and skills	13. End-of-Life Professional Caregiver Survey 14. Self-Efficacy for Interprofessional Experiential Learning Scale 15. Interdisciplinary 16. Palliative Care Knowledge Survey 17. Focus groups	18. Students from all disciplines showed significant improvements on quantitative measures; chaplaincy students did not reach significance on some scales. 19. Open-ended responses indicated that ICME and rotations were the most enjoyable aspects of the intervention. 20. Authors concluded that the curriculum was successful in teaching skills and knowledge and affecting attitudes and abilities of students to provide team-based oncology care. 21. Recommend continuing similar programs in health sciences to provide hands-on, interdisciplinary learning opportunities.

Table 2. (Continued).

Authors (year)	Methods	Professions (sample)	Outcomes		
			Content	Format	Key findings and recommendations
Conti et al. (2016)	22. Post-experience survey and open-ended questions. 23. Interdisciplinary teams assigned to older adults in the community. 24. Students made 293 visits total to 208 older adult participants.	25. Medicine (303) 26. Pharmacy (177) 27. BSN level (84) 28. Occupational Therapy (64) 29. BSW level (101) 30. MSW level (132) 31. 861 students over over semesters	32. Team function 33. Valuing home visits 34. Understanding older adults 35. Valuing IPE experience	36. Learning from Interprofessional Educational Experiences Survey with open-text question component	37. Survey results showed students held strong positive attitudes toward aging and older adults and toward team-based collaborations. 38. Participants also reported learning about the roles and responsibilities of other professions and rated the experience highly; 82% stated they would welcome more IPE opportunities.
Forrest and Derrick (2010)	1. Descriptive evaluation study of the Interdisciplinary Educational Specialization in End-of-life Care program, which was designed based on a needs assessment described elsewhere.	39. MSW level 40. BSN level 41. Clergy students 42. 13 student pre– post evaluations analyzed.	43. 30 competencies related to knowledge, skills, and professional identity. 44. Content areas: communication, advance care planning, futile treatments, IPP.	45. Pre- and posttest survey of student competency self-assessment and focus groups. 46. No formative assessments used.	47. Program participants reported that the experience helped them confirm a desire to work in end of life (EOL) or generated their desire to do so. 48. All respondents indicated that the program increased their knowledge of interdisciplinary work in EOL. 49. Follow-up data show that over 70% of program participants go on to work directly in EOL care.
Chan et al. (2009)	50. Mixed method evaluation of interprofessional seminars for undergraduate nursing and social work students aimed at developing their caring dispositions. 51. The interdisciplinary seminars discussed case scenarios related to elder abuse, which allowed for students to learn about one another's caring perspectives within the context of decision making.	52. BSN level (16) 53. BSW level (16) 54. Total of 32 students over two seminars a week apart each.	55. Student's views about the teaching approach; ethical decision-making and caring; each other's roles; communication; values and beliefs related to decision making.	56. Data collected via videotaped recordings, Likert scale questionnaire, and follow-up telephone interviews. 57. Date were analyzed through descriptive statistics and content analysis.	58. Themes and subthemes included an increased self-awareness of their professional values, enhanced understanding of caring, improved communication and open-mindedness, and building trusting relationships. 59. Authors concluded that seminars are an effective medium through which interdisciplinary education on nursing and social work can be delivered.

Table 2. (Continued).

Authors (year)	Methods	Outcomes			Key findings and recommendations
		Professions (sample)	Content	Format	
Bonifas and Gray (2013)	60. Pre-posttest quasi-experimental design examining two curricula aiming to prepare social work students for collaboration in geriatric care. 61. One curriculum used an interprofessional approach; the other a uni-professional approach. 62. The other curriculum discussed interdisciplinary collaborations in a social work course.	63. MSW level 64. Medicine 65. Nutrition 66. Pharmacy 67. Nursing 68. Authors only stated the program levels (MSW) for the social work profession. 69. 69 students in the interprofessional curriculum, 19 in the uni-professional one.	70. Changes in social work students' attitudes and values toward IDT 71. Understanding of roles and training requirements of multidisciplinary partners.	72. Pre– posttest using adapted version of the Attitudes Toward Health Care Teams Scale. 73. 10 multiple choice questions developed by the team used to assess understanding of professional roles and training of IDT members.	74. Students in the interdisciplinary curriculum significantly improved their attitudes and values toward interdisciplinary collaborations but did not show as much improvement in their understanding of each profession's roles. 75. Students in the uni-professional curriculum significantly improved their understanding of other team members' roles but did not change their attitudes and values toward collaboration. 76. Authors concluded that interprofessional education is the better approach to obtain change in students' attitudes about interdisciplinary teams.
Sheppard et al. (2015)	77. Mixed-method study evaluating the effects of an interprofessional clinical experience (ICE) on attitudes toward older adults and interprofessional education. 78. ICE program was developed based on IPEC core competencies and focused on interprofessional practice in nursing homes.	79. Medicine 80. Dentistry 81. Nursing 82. Nutrition 83. OT 84. Optometry 85. Social work 86. 171 student responses 87. Authors did not state students' program level.	88. Attitudes toward interprofessional teams 89. Attitudes toward older adults	90. Quantitative pre-and posttests data collected using the UCLA Geriatric Attitudes Scale; focus groups analyzed using an inductive thematic approach.	91. No significant changes in attitudes were found, except for the statement "Most old people are pleasant to be with," which improved from 27.4% to 44% of students strongly agreeing from pre- to post-ICE. 92. Generally, students reported positive attitudes toward interprofessional teamwork and older adults. 93. The authors conclude that the brief interprofessional curriculum offers the potential to be applied successfully.

(Continued)

Table 2. (Continued).

Authors (year)	Methods	Professions (sample)	Outcomes		Key findings and recommendations
			Content	Format	
Park et al. (2014)	94. Pre-posttest intervention study testing the effects of IPE program. 95. Intervention: (1) IPE development session, and (2) the Senior Aging and Geriatrics Educator mentoring program.	96. Medicine (first year) (52) 97. BSN-level nursing (49) 98. MSW (first year)-55	99. Attitudes toward interprofessional collaborations (physician–social worker, physician–nurse, nurse–social worker)	100. Pre–post data collected using the original and modified versions of the Jefferson School of Attitudes Toward Physician-Nurse Collaboration	101. Social work students and nursing students reported the least positive attitudes toward the physician–social worker/physician–nurse collaborations, respectively. 102. Medical students improved their attitudes toward all three collaborations to a greater degree than the other students, which is inconsistent with previous findings. 103. Authors recommend that the curriculum be evaluated and assessed for integrity, and that postgraduate follow-up measures be incorporated to assess long-term change.
Heuer et al. (2010)	1. Small survey exploration of the effects of a 60-minute interdisciplinary case-simulation session on medical students' awareness of other professions' scope of practice and communication skills.	104. 116 students from medicine. 105. Faculty from medical imaging, nutrition, laboratory technology, nursing, physical therapy (PT), physician assistant (PA), respiratory therapy, and social work.	106. Awareness of other professions' scope of practice 107. Appreciation for IDT and communication 108. Students' experience with the intervention	109. 12-item survey used to collect participant feedback as well as open-ended qualitative questions regarding the initiative.	110. Participants reported that the session was a good means to achieve the goals set out. 111. Survey results indicated that medical students' awareness and appreciation of other health professions increased and was overall positive. 112. Authors conclude that future sessions should be adjusted based on student feedback, and that the sessions are a challenging yet valuable educational undertaking.

Table 2. (Continued).

Authors (year)	Methods	Professions (sample)	Outcomes		
			Content	Format	Key findings and recommendations
Murphy and Nimmagadda (2015)	113. Pre–post quasi-experimental survey design evaluating the effectiveness of an educational simulation for nursing and SW students.	114. Purposive sample of 43 nursing and 45 social work students.	115. Teamwork and collaboration 116. Patient centeredness 117. Sense of professional identity	118. Pre- posttest using the Readiness for Interprofessional Learning Scale.	119. Uncertainty about interprofessional roles decreased by more than two thirds in both groups. 120. Both nursing and SW students identified new strengths such as reflective listening and open-mindedness for the SW role on posttest.
Heflin et al. (2014)	121. Pre-licensure course providing interactive teaching sessions to students from various health care professions. 122. The educational component focuses on enhancing transitions of care for older adults by improving interprofessional practices.	123. Medicine 124. Pharmacy 125. Physical Therapy 126. Physician Assistants 127. Nutrition 128. Social work faculty 129. 18 completed the evaluation over two semesters.	130. Course topics delineated in the syllabus include describing IDT member roles, interprofessional communication, and care planning. 131. Learning outcomes: knowledge and skills in clinical care and in quality improvement, and communication and collaboration.	132. In-class and online participation, performance on assignments, and team-based proposals used to assess students. 133. Student self-efficacy measured at pre- and post-course completion.	134. Students' self-efficacy ratings significantly improved in teamwork skills, transitions of care, quality improvement, and cultural competence. 135. Students' course evaluation feedback indicated that they appreciated the interactive experience and getting to engage in relevant work, as well as the enthusiasm of the course faculty.

satisfaction and educational efforts, Dorfman et al. (2008) implemented a supplementary "GeroRich" Social Work education program. In this program, community collaborations were the intervention aimed to strengthen the aging-focused learning opportunities. This study of advisory board members and social work faculty members found that programs utilizing community collaborations improved gerontological social work education and that this type of community partnership could benefit nursing programs as well (Dorfman et al., 2008).

Across these studies, students reported having positive experiences participating in both the required and supplemental educational efforts (Addy, Browne, Blake, & Bailey, 2015; Golden, Gammonley, Hunt, Olsen, & Barry Issenberg, 2014). These educational opportunities were found to be enjoyable for students and highlighted important features of each respective discipline (Addy et al., 2015; Golden et al., 2014). Additionally, students perceived that they had gained an understanding of key health concepts following this collaboration (Addy et al., 2015). Finally, a state-of-the-science by Damron-Rodriguez (2008) found that shared learning between social work and nursing programs may lend toward competency-based education; however, competence must be defined and assessed in an ongoing basis within schools of social work and schools of nursing.

In conclusion, the articles with a focus on student and faculty experiences described in this theme report that the broad scope of educational efforts between nursing, social work, and allied health care professions widens the understanding of students, which promotes teamwork and comprehension of care best practices across disciplines. Table 3 includes details of each study, including the methods, participants, data collection, and key findings and recommendations.

Critique of the literature

There are limitations to the articles included within this study that should be noted. First, there was a lack of theoretical frameworks providing guidelines and boundaries for the programs used across all articles but one (Rowan et al., 2009). The use of theoretical frameworks may challenge and extend existing knowledge, strengthening the work within the limits of each study conducted, respectively. For example, authors may have used the IPEC competencies to frame their program goals or discussed how their learning objectives align with the competencies that IPEC recommends for IPE and practice. Second, 7 of the 24 articles were review articles and lacked a procedure for conducting the study, either as a mixed-methodological, qualitative, or quantitative study design. The lack of details makes it difficult for the reader to assess the comprehensiveness of the review and the accuracy of the conclusions drawn. Third, all studies used purposive, non-probability sampling techniques. Based on researchers selecting study participants, or students self-selecting, findings from these studies may not be generalizable to students or universities across the nation. Last, many studies reported findings based on self-reported, subjective assessments (e.g., Forrest & Derrick, 2010). The lack of rigorous summative assessments makes it difficult to assess actual changes in knowledge, skills, and attitudes resulting from the intervention.

Discussion and implications

This systematic review provides a comprehensive summary of the literature published on interprofessional education initiatives that have been developed and implemented in an effort to best prepare nursing and social work students for interprofessional gerontological practice (i.e., program descriptions, evaluation of programs, and student and faculty responses). A total of 24 articles were reviewed. These publications highlight the potential of IPE efforts to prepare students for gerontological practice and interdisciplinary teamwork, as well as student and faculty receptiveness to such efforts. The small number of publications also highlights the particular need for increased action around IPE in gerontological social work education, and for IPE programs to be evaluated and findings disseminated to the research community. The few initiatives identified in this review of the literature represent programs' attempts to fill educational gaps within their curricula. There is a need

Table 3. Student and Faculty Experiences (*n*=5)

Authors (year)	Methods	Professions (sample)	Outcomes		Key findings and recommendations
			Content	Format	
Brooks et al. (2009)	1. Authors address the best practices for teaching the course titled Aging to Infancy, across universities from four states. 2. This article presents a review of the number of gerontology-focused courses across universities in these states.	1. Aging curriculum across Indiana, Illinois, Michigan, and Ohio. 2. The course is a prerequisite for admission to nursing, occupational therapy, social work, and dietetics programs.	1. Conceptualization of the health care team 2. Positive introduction to aging 3. Reduction in agism	1. Course midterms, finals, and assignments 2. Course reviews	1. Many disciplines, including nursing, dietetics, social work, and occupational therapy, report similar challenges with integrating gerontological content into their curriculum. 2. Students report that having four instructors from different health professions gave a broad version of all aspects.
Damron-Rodriguez (2008)	This article presents a state of the science, capturing findings from previous educational approaches to preparing nurses and social workers for supporting family caregivers.	3. Nursing 4. Social Work (SW) 5. Medicine	6. CSWE and Hartford Geriatric competencies that specifically mention family, such as diversity, communication, and assessment.	7. Review of the literature from the past decade (1998–2008).	8. It was found that competence in geriatrics is central to interdisciplinary teamwork. Shared learning may be helpful across disciplines. 9. Recommend that a framework for educating and training nurses and social workers contain four central elements: what, how, where and when, and how well.
Dorfman et al. (2008)	10. Mixed-methods study analyzed data from advisory board members. 11. Advisory board guiding curriculum included social work faculty, community partners, older adults, PhD students, and a graduate and an undergraduate representative.	12. 9 faculty questionnaires responses 13. 11 advisory board responses	14. Support and satisfaction with project 15. Suggestions regarding sustainability and future implementation	16. Questionnaire adapted from the GeroRich Project	17. Both groups agreed that the "GeroRich" project, to provide BSW students with gero-education courses, is positive for SW curriculum. 18. Authors encourage the replication of the program with nursing and other allied health care professionals.
Addy et al. (2015)	19. This article shares modifications made to an interdisciplinary course and evaluated changes in end-of-course evaluations from students from year 2013 to 2014 of implementation.	20. Medicine 21. Nursing 22. Pharmacy 23. Public Health 24. Social Work 25. Program level varied 26. 2013 cohort (256) 27. 2014 cohort (394)	28. Values/ethics 29. Roles/responsibilities 30. Communication and teams/teamwork	31. Online end-of-course evaluation 32. Student reflections about the course	33. Students shared they enjoyed being with health care students across disciplines. 34. Students' rating of all course items significantly improved from 2013 to 2014.

(Continued)

Table 3. (Continued).

Authors (year)	Methods	Professions (sample)	Outcomes			Key findings and recommendations
			Content	Format		
Golden et al. (2014)	1. Cross-sectional survey of student groups' values regarding older adults. 2. The purpose of this study was to drive the development of a geriatric-focused interprofessional collaboration.	35. Medicine (third year) (31) 36. Nurse practitioners (NP) (70) 37. MSW level social work (131)	38. Attitudes toward caring for older adults 39. Attitudes toward personal aging 40. Attitudes about health reform legislation 41. Beliefs about leadership in IDT	42. Paper and pencil surveys 43. Geriatrics Attitude Scale (GAS) 44. Reactions to Aging Questionnaire (RAQ) 45. Patient Protection and Affordable Care Act (PPACA) assessment		46. Results show that the profession shared similar attitudes toward personal aging, and NP and SW students had more positive attitudes related to caring for older adults than medical students. Overall, all scores were within the neutral range of attitude. 47. Varied differences were identified in attitudes toward leadership and the effect of health care reform. 48. Authors emphasize the need for IPE to highlight the value systems of each profession involved in care teams.

to expand the depth and breadth of these efforts, including access to programs, duration of programs, and gerontological topics of focus. What follows is a discussion of recommendations for future research and education. These recommendations come from the literature discussed as well as the authors' additional recommendations.

Social work educators and researchers have made significant efforts to develop and deliver IPE to students interested in aging practice, but more is needed. A major limitation in the current literature stems from the lack of rigorous research methods employed in the design and evaluation of the educational interventions (e.g., Dorfman et al., 2008; Ellman et al., 2012; Hermann et al., 2016). Future educational initiatives should be developed based on explicitly stated IPEC competencies and evaluated for effectiveness using more rigorous methods. One way to achieve this may be through the use of validated and reliable assessment tools, such as the IPEC Competency Self-Assessment tool, derived from IPEC competencies. Developed by Dow, DiazGranados, Mazmanian, and Retchin (2014), the tool measures students on 42 core competencies across two domains, interprofessional interactions and interprofessional values.

Even though differences in professional mandates add complexity to decisions about which competencies to measure (Hermann et al., 2016), several disciplines have made efforts to establish assessment measures based on interprofessional collaborative efforts (e.g., Lockeman et al., 2016). Social work gerontology educators should take advantage of these developments by using them within and across departments at the university level. In addition, social workers, with their commitment to a biopsychosocial approach, are well-positioned to initiate and steer collaborative efforts related to the development of such measures. Further, efforts have been made to identify competencies relevant to both nursing and social work, to develop a framework for education. This was done, for example, by Damron-Rodriguez (2008) with a focus on preparing nurses and social workers to support older adult family caregivers. Future research should be conducted to identify competencies most important to interprofessional gerontological health care practice relevant across multiple disciplines and settings, and how to measure them.

Social desirability bias is another concern across the articles included within this study. Kolomer et al. (2010) discussed the risk for socially desirable responses associated with having the IPE initiatives be part of a graded course. This risk is magnified by the use of subjective measures such as self-assessments and untested instruments (e.g., Hermann et al., 2016). To minimize this risk, objective measures using standardized instruments should be employed whenever possible. A standardized instrument recommended for future use in some of the articles reviewed is the Geriatric Social Work Competency Scale II (e.g., Brooks et al., 2009; Damron-Rodriguez, 2008). Head et al. (2016) recommended that future research measure the long-term effect of the IPE interventions.

In addition to standardized instruments, studies should implement rigorous sampling and randomization techniques. Golden et al. (2014) recommend that future studies use larger sample sizes to improve their statistical power. Although engaging in unbiased sampling, recruitment, and retention of students across professions can be logistically challenging (Mirick, Davis, & Wladkowski, 2017; Rubin & Babbie, 2011), these investments will help to better assess outcomes and refine educational initiatives, moving the field forward. It is also important to emphasize that, although randomization is difficult given that IPE programs are often delivered as part of a semester course, efforts should be made to incorporate a control group. For example, if the IPE is delivered as an aging course elective, another section of the aging course where IPE is not delivered can be used as a control group. Internal validity would be limited, but it would be a step forward from the non-experimental designs currently employed.

Opportunities also exist for improving the implementation of IPE programs, particularly when programs include field placements, clinical rotations, or partnerships with community agencies. Several of the articles included in this review recommend that programs continue to prioritize face-to-face, small-group educational opportunities to connect health profession students and promote interactions among disciplines, as it has been found to be an integral component of their IPE

programming (e.g., Dorfman et al., 2008). This recommendation is well-aligned with CAIPE's definition of IPE (Buring et al., 2009). Kolomer et al. (2010) and Poole et al. (2013) also emphasize the importance of developing or strengthening community partnerships. It is important that, when IPE initiatives are implemented in the community, special attention is paid to the sustainability and continuity of the resources and supports that the students and programs represent. Including feedback from community members receiving care can be a constructive approach to assessing student learning, and an effective component of the evaluation of IPE. Simultaneously, such feedback can help providers learn about the experiences of community members and effect of the program. Soliciting feedback from community members, as Rowan et al. (2009) did in their program, can also help strengthen academic–community partnerships and support programmatic improvements. Community members may also be engaged in discussions about their needs and ways in which academic–community partners can remain involved between rounds of implementation, which is crucial to the quality and effect of the program on the community and on older adults.

Finally, future initiatives must consider the varying skills and knowledge that students from multiple disciplines possess, and how to build curricula that supports all of their needs. For example, some of the programs included in this review involved both BSW and MSW students, and it is unclear whether lack of preparedness of BSW students to engage in some higher-level IPE activities emerged as a concern. The benefits and limitations of combining BSW and MSW students in IPE experiences involving graduate students from other health professions merits further investigation. Moreover, nursing students with a strong scientific foundation and understanding of the biological and physiological components of aging may lack understanding of the holistic, socioeconomic, psychosocial, and behavioral aspects of aging, which influence the health care decision-making process and are crucial in social work practice. As such, nursing students ought to be engaged in coursework and curricula that addresses social influences, pursues social change, and maximizes the quality of life for older adults.

Programs need to develop the infrastructure required to support interprofessional collaborations in research projects as well as in classrooms, across levels of higher education, so that social work faculty's own practices mirror the interprofessional values they hope to impart onto students. Jones and Phillips (2016) discussed the competencies of IPE as detailed by IPEC and provided a similar recommendation, for "dual and reciprocal appointments of faculty in schools of social work, medicine, public health, nursing, and so forth … [and for] co-taught courses that bring together multiple faculty and students from a variety of disciplines" (p. 26). Social work and nursing programs should build capacity for interprofessional practice, research, and education. This will require that leaders from various programs come together and discuss their accreditation mandates and work together to support the development of collaborations. For example, CSWE EPAS (2015) requires that social work faculty have 2 years of post-master's social work degree practice experience, and other programs may have similar requirements that will dictate how to develop coteaching initiatives. The need for program and profession leaders to come together has been previously expressed and can be found in the IPE literature (Clark, 2011; Hall & Zierler, 2015; Jensen, Harvan, & Royeen, 2009).

Conclusion

This is the first systematic review to examine interprofessional gerontological education programming within social work and nursing programs in the United States that can be located. Findings from this study highlight the current programs engaging in IPE to prepare gerontological and health care social workers, as well as the effectiveness of such programming. Overall, this literature points to IPE educational initiatives as valuable and effective at increasing the self-awareness, attitudes, and skills of social work and nursing students engaged in gerontological practice. Moving forward, the study of such initiatives should explore the benefits of IPE on long-term outcomes, such as increased enrollment in further gerontology-specific studies (e.g., BSW students entering MSW aging concentrations) and on students' readiness to practice with the older adult population. Ongoing examinations of the effect IPE initiatives have on the well-being

of older adults is also an area requiring continued research. These interprofessional programs may arm up-and-coming professionals with the skills and knowledge required to competently care for the growing population of aging Americans and for practicing within the health care system. As such, it is of paramount importance that social work programs infuse interprofessional education into their programming and curricula, and support faculty in their efforts to collaborate across departmental silos.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Asterisks indicate the 24 studies included in the systematic review.
Daggers indicate the 83 excluded on full review.
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