ABSTRACT

Background: The health impact of adverse childhood experiences (ACEs) is significant. Nurses need knowledge and must work in multidisciplinary teams to address this problem. This study examined the effects of an interprofessional education (IPE) activity with nonhealth care students on associate degree nursing (ADN) students’ ACEs knowledge and perspectives on IPE. Method: The mixed-methods approach used a quasi-experimental pretest–posttest design with an intervention and control group and thematic analysis of focus group data. Results: Readiness for Interprofessional Learning scale mean scores indicated positive baseline IPE perspectives. Scores changed minimally for most measures in both the intervention and control groups on posttest. However, four major relevant themes related to ACEs knowledge and two related to interprofessional learning were identified. Conclusion: IPE with nonhealth care students is an effective way to teach ADN students about ACEs and infuse interprofessional learning in a nonuniversity setting. However, outcomes are best captured with qualitative data. [J Nurs Educ. 2018;57(2):101-105.]

The impact of social and environmental influences on health is increasingly recognized (Institute of Medicine, 2006). This includes the long-term consequences of childhood experiences. Most of the research in this area started with the landmark adverse childhood experiences (ACEs) study by Felitti et al. (1998), which identified a significant, graded relationship between ACEs and adulthood health risk factors and disease. The Centers for Disease Control and Prevention (CDC, 2016a) defines ACEs as physical, emotional, or sexual abuse, neglect, substance abuse, incarceration, or mental illness among household members, and parental separation or violence between adults during the first 18 years of life. Ongoing surveillance indicates ACEs are very common with 63.9% of adults reporting a history of at least one and 12.5% reporting four or more (CDC, 2016b). Exposure to more ACEs is associated with more health risk behaviors and poorer outcomes (O’Connor et al., 2012). This dose–response relationship has been identified between ACEs and more than 20 negative health and quality of life outcomes, such as financial stress, illicit drug use, depression, alcoholism, smoking, chronic obstructive pulmonary disease, ischemic heart disease, and cancer (CDC, 2016b). Thus, ACEs are a significant public health concern (CDC, 2016a). As frontline health care professionals, nurses need knowledge about this important health issue and skills for assessing ACEs history and mitigating risk for individuals, families, and communities. However, the literature is void of any studies examining strategies for providing ACEs education to prelicensure nurses.

Complex health problems such as ACEs require a team-based, multidisciplinary approach to be effectively addressed. Therefore, interprofessional education (IPE) may provide a valuable approach for teaching nursing students about this issue. Defined as two or more professions learning “interactively to improve collaboration and the quality of care” (Reeves et al., 2011, p. 169), IPE initiatives and research have been gaining momentum as the need for collaborative teamwork is increasingly recognized as vital to improving patient safety and outcomes (The Institute of Medicine, 2003; Quality and Safety Education for Nurses, 2014). Numerous studies and three literature reviews have been published on IPE outcomes with nursing students. Results suggest that IPE benefits include the acquisition of knowledge and skills (Hudson et al., 2013; Meekins, 2016; Reese, Jeffries, & Engum, 2010; Wong et al., 2017), more awareness of roles and responsibilities (Hudson et al., 2013; Kent & Keating, 2015), and improved understanding of collabor-
orative teamwork (Hudson et al., 2013; Kent & Keating, 2015; Meekins, 2016; Sullivan et al., 2015). Findings are mixed or inconclusive regarding the impact of IPE on students’ attitudes and readiness toward IPE (Kent & Keating, 2015; Sullivan et al., 2015; Wong et al., 2017) and patient outcomes (Hudson et al., 2013; Kent & Keating, 2015; Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013).

Current IPE evidence for nursing education is largely from samples of baccalaureate or graduate students in university settings, with few studies reporting involvement of associate degree nursing (ADN) students. This may be because technical and community colleges have limited opportunities for collaborating with students from the health professions most commonly included in IPE nursing research, such as medicine, pharmacy, and social work. Yet, 61% of nurses enter practice from ADN programs (National League for Nursing, 2017). This generates a need for creative approaches to IPE with the inclusion of disciplines that may differ from university settings. In addition, with growing numbers of nursing positions projected to be in community settings (The Institute of Medicine, 2010), nurses will increasingly collaborate with nonhealth care professionals. Therefore, IPE nursing research involving students from nonhealth care professions within the context of challenging community-based health problems such as ACEs is needed. The purpose of this pilot study was to examine the effect of an IPE activity of this nature on ADN students’ perspectives on interprofessional learning and knowledge of ACEs.

Method
Design, Sample, and Intervention Description

A mixed-methods design guided by the Interprofessional Education Collaborative Expert Panel (2016) framework was used for this study. The qualitative portion used a quasi-experimental pretest–posttest design with an intervention and control group to examine perspectives on interprofessional learning. The sample was second-semester ADN students enrolled in a clinical course at two campus locations within one college. Students from site A (n = 17) were the control group, receiving the usual instructional activity of viewing a documentary on childhood trauma and discussing thoughts among classmates. Students at site B (n = 18) received the intervention described below. The qualitative part of the study examined ACEs-related knowledge and perspectives on interprofessional learning among ADN students from the intervention group that was collected during a focus group interview and analyzed for themes. A purposive sample of five ADN students from the intervention group, including both male and female students of various backgrounds and ages, was used. The college’s board for reviewing instructional research approved the study.

The intervention group in this study received a 4-hour IPE seminar on ACEs with students from the criminal justice and early childhood education programs. Students were divided into small, interprofessional teams in advance of the session. Following an icebreaker activity and viewing the documentary on childhood trauma, students completed guided discussion activities in their teams. This was followed by a panel discussion in which local nursing, education, and law enforcement professionals discussed their work-related experiences, responsibilities, and perspectives regarding ACEs in the community. The seminar ended with a problem-based learning activity completed in teams.

Data Collection and Analysis

In the quantitative part of the study, ADN students’ perspectives on interprofessional learning were examined per the Interprofessional Education Collaborative Expert Panel (2016) framework competencies of teams/teamwork, values/ethics for interprofessional practice, roles/responsibilities, and interprofessional communication using the Readiness for Interprofessional Learning (RIPL) scale (Parsell & Bligh, 1999) as adapted by the Latrobe Community Health Service and the Health and Social Care Interprofessional Network (2009). This instrument consists of 19 items rated on a 5-point scale (1 = strongly disagree to 5 = strongly agree). It was developed from a conceptual framework based on expert input and evidence (Parsell & Bligh, 1999). Construct validity was established with a panel of 13 experts. Reliability testing revealed internal consistency of .90 and three subscales: teamwork and collaboration (α = .88), professional identity (α = .63), and roles and responsibilities (α = .32). The teamwork and collaboration subscale were used to measure perspectives regarding teams and teamwork. The professional identity subscale was used to measure perspectives regarding values and ethics for interprofessional practice. Due to low reliability scores for the roles and responsibilities subscale, only one item was used to measure the concept: “I’m not sure what my professional role will be” (Parsell & Bligh, 1999). The RIPL scale does not have an interprofessional communication subscale, so two communication items were combined to measure the concept.

Nonfaculty staff administered the RIPL to the intervention and control groups before and after the intervention or usual learning activity. Faculty were not present during administration. Survey completion implied consent to participate. All 17 control group students participated in both the pre- and postsurveys. Only 12 of 18 intervention group students completed both with enough details to be included in the final sample. The intervention group was 83% female, with ages ranging from 21 to 49 (mean = 31.45). The control group was 94% female, with ages ranging from 20 to 36 (mean = 26.82). Experience with interprofessional teamwork was reported by 41% of both groups; but, only 25% of the intervention group reported experience with interprofessional learning as compared with 47% of the control group. Data were analyzed with SPSS (version 23) software. Categorical variables were summarized with counts and percentages, and continuous variables were described using means and standard deviations. Inferential statistics were not reported as this pilot study was not adequately powered to show statistically significant results.

In the qualitative portion of the study, a semi-structured focus group interview was used to collect data on nursing students’ knowledge of ACEs and perspectives on interprofessional teamwork (Table). A research assistant recruited five participants from the intervention group and conducted a 60-minute audiorecorded interview in a college classroom. A $10 gift card was provided as an incentive. Identities remained confidential to remove any perception that thoughts expressed during the
Communicates effectively “with patients, families, communities, and professionals” (p. 10) 

Teamwork and Collaboration Subscale: Belief that interprofessional learning supports the development of effective teamwork skills and positive relationships with other disciplines (n=12) 

Professional Identity Subscale: The importance one places on discipline-specific knowledge and values in contrast to openly sharing expertise (n=17) 

Roles/responsibilities Item: “I’m not sure what my professional role will be” (p. 98) 

Interprofessional Communication Items (n=2): (1) Belief that communication skills should be learned with students from other professions and (2) shared learning will improve communication with patients and professionals (p. 10) 

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<td>Teams/teamwork: Uses “relationship-building values and the principles of team dynamics to perform effectively” (p. 10)</td>
<td>Teamwork and Collaboration Subscale: Belief that interprofessional learning supports the development of effective teamwork skills and positive relationships with other disciplines</td>
<td>4.47 (.60)</td>
<td>4.29 (.74)</td>
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<td>Values/ethics for Interprofessional Learning: Works “with individuals of other professions to maintain a climate of mutual respect and shared values” (p. 10)</td>
<td>Professional Identity Subscale: The importance one places on discipline-specific knowledge and values in contrast to openly sharing expertise</td>
<td>4.09 (.91)</td>
<td>4.03 (.86)</td>
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<td>Role/responsibilities: Uses “knowledge of one’s own role and those of other professions” (p. 10)</td>
<td>Roles/responsibilities Item: “I’m not sure what my professional role will be” (p. 98)</td>
<td>2.42 (.79)</td>
<td>2.58 (.79)</td>
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<td>Interprofessional Communication: Communicates effectively “with patients, families, communities, and professionals” (p. 10)</td>
<td>Interprofessional Communication Items (n=2): (1) Belief that communication skills should be learned with students from other professions and (2) shared learning will improve communication with patients and professionals</td>
<td>4.38 (.58)</td>
<td>4.21 (.72)</td>
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* Higher score and positive mean change desired.  
* Lower score and negative mean change desired.

session would influence course grading. Data were transcribed by two work study students skilled in transcription and analyzed for themes independently by both authors with subsequent discussion to reach consensus.

### Results

#### Quantitative Results

The aim of the quantitative part of the study was to measure ADN students’ perspectives toward interprofessional learning. Views on teams and teamwork indicated that the majority of ADN students agreed interprofessional learning would make them more effective members of the health care team and benefit patients. A small decrease in means was noted in both the intervention (4.38 to 4.21) and control (4.79 to 4.38) groups (Table).

#### Qualitative Results

The aim of the qualitative portion of the study was to examine ADN students’ knowledge of ACEs and interprofessional learning perspectives following the IPE activity. Four major themes related to ACEs knowledge and two related to interprofessional learning were identified.

**ACES Knowledge.** Results of the focus group interview indicated students’ knowledge of ACEs increased as a result of the learning activity. The first theme that emerged is an actual quote from a participant: “I had no idea about the problem or its detrimental impact.” Students seemed surprised to learn about the connection between childhood experiences and adult health problems, their cumulative effect, and the prevalence of this issue. Another student stated, “It is vital to our education to understand what’s going on in our patients.”

A second theme that emerged was establishing trust and individualizing care are essential. During the focus group, students discussed how they would apply what they learned in their nursing practice. One student stated, “I would try and get a bond going first so you can be somebody they can trust, because if you start doing physical stuff you could do more damage than good.” Another said, “So you really have to individualize the care.”

Although students clearly gained information about the existence and prevalence of ACEs and insights regarding how
to approach patients, a third theme indicated a desire to know more: “We need more information and training.” One student simply stated, “I really want more information.” Another expressed interest in more nursing-specific training, stating that instead of the case study, “I would have rather learned how we use this, you know, as a nurse. What do we do when these patients come in and have a 10 out of 10 score?” In reply, another stated, “maybe the whole point of the whole exercise was for us to find out how it is to really deal with these problems, and if that was the point of the exercise, then it probably succeeded.”

The fourth theme that emerged was community education, funding, and resources needed. ADN students were struck by the fact that the need for funding was emphasized by all the panel members. They also highlighted the current lack of evidence, best practices, and resources for addressing ACEs and their consequences. Students concluded that community education may be a logical first step toward building awareness to secure more resources. One student stated, “maybe if more people knew about how bad it is, they would be more willing to kind of push for more of that funding and do more things to help the issue.”

Interprofessional Learning. Analysis of the focus group data indicated that students generated new insights regarding interprofessional values, teamwork, communication, and roles through the IPE activity. The first theme that emerged was teamwork is challenging. Some perceived lack of engagement, as well as exhaustion, regarding the issue among students from other programs. However, this generated valuable insights. One said, “I think by the end they did get exhausted, so I think... it replicates a real-life situation, and after a while people are going to get exhausted.” This awareness was translated into ideas for teamwork strategies to use in the future. For example, one student emphasized the need to have “more flexibility... just being more flexible in how you do things... to get that care that is needed.”

The second theme that emerged was teamwork is challenging. It was clear that ADN students found many aspects of the IPE activity to be challenging. Some perceived lack of engagement, as well as exhaustion, regarding the issue among students from other programs. However, this generated valuable insights. One said, “I think by the end they did get exhausted, so I think... it replicates a real-life situation, and after a while people are going to get exhausted.” The panel of presenters also made a strong impact on the ADN students. This generated insights regarding the importance of working together, which were best summarized by one student: “The presenters were fantastic and listening to them talk about working together, yeah I think it’s vital...[Worst] case, if you don’t work together nothing happens, best case you don’t work together, things happen, but it takes a lot more time, effort, and money because you did not work together. And, something like this... it’s questionable whether it’s fixable, if our society can really get this fixed to begin with. It’s imperative that people work together.”

Discussion

The aim of this pilot study was to examine the effect of an IPE activity on ADN students’ perspectives regarding interprofessional learning and knowledge of ACEs. As one of a few studies to examine IPE in this population, the quantitative results indicated that ADN students had generally positive perspectives about interprofessional learning at baseline. However, posttest scores indicated perspectives changed very little and in a negative direction for both the intervention and control groups. It is possible a larger intervention dose may be needed. Posttest scores might also be explained by a ceiling effect with the RIPL instrument (Oates & Davidson, 2015). In contrast to these results, the qualitative results revealed the IPE activity helped ADN students generate rich insights about the value and challenges of working as part of an interprofessional team, as well as awareness regarding differences in the way other professions approach problems and the importance of being flexible and working together. Considering these contradictory findings, future research should consider innovative ways to measure IPE outcomes.

In contrast to previous research (Hudson et al., 2013; Kent & Keating, 2015), ADN students who participated in the IPE activity had slightly more uncertainty about their interprofessional roles and responsibilities than those in the control group. Notably, this study was unique from most of the IPE nursing literature, given that it included students from nonhealth care programs and focused on ACEs. Possibly, the IPE activity provided intervention group students with more realistic perspectives on the challenges of addressing complex health issues as part of interprofessional teams, thus leading to the more negative scores. This is supported in part by the qualitative results, which indicated the IPE process was not always viewed as enjoyable. Further, some questioned the value of learning exercises such as the case study. Even so, the ADN students recognized the experience as similar to what may be encountered in their nursing careers. Future research is needed to clarify IPE outcomes in the area of roles and responsibilities.

ADN students developed valuable knowledge about ACEs from the IPE activity. The students expressed surprise to learn about the pervasiveness and detrimental health effects of this issue. Further, they voiced a strong desire for more education, particularly assessment and intervention skills. The interprofessional panel of speakers was perceived as informative, helpful, and even inspirational. Panel members’ stories provided real examples, highlighted challenges and barriers, and clarified professional roles within the context of the problem. Instructors interested in implementing IPE activities in the future should consider including such panels. In addition, it may be beneficial for students from each program to spend time alone with their representative professional to discuss the process of developing teamwork skills within the context of their discipline and the problem being addressed.

Finally, the focus group process advanced participants’ insights about interprofessional learning and ACEs through dialogue and reflection. Some of these perspectives seemed to evolve during the focus group session. This is consistent with qualitative data collection—the process of telling one’s story can be therapeutic and generate new insights (Riessman, 2008). As students talked, they came to conclusions regarding some of their unanswered questions, such as how to best provide care for patients with high ACE scores and address the problem at a community level. Future IPE activities should include small, interprofessional debriefing sessions.
Limitations

The intervention for this study consisted of only one 4-hour seminar due to time constraints in all programs. The condensed format may have affected intervention effectiveness. The study involved a small sample. Therefore, results cannot be generalized to all ADN students and statistical significance cannot be inferred. Because the sample consisted of only one group from two campuses, group differences and a cohort effect may also have affected the results.

Conclusion

Creative approaches to designing IPE activities are possible in technical college-based ADN programs. The experience of interacting with students and professionals from nonhealth care disciplines supports ADN students' knowledge of complex health issues, such as ACEs. It also generates valuable insights on how other professions view problems, teamwork, and the importance of interprofessional collaboration for addressing community-level problems.

References


