



# Interprofessional education and collaboration in public health: a multidisciplinary health professions IPE project

Jenni L. Hoffman<sup>1</sup> · Joan E. Cowdery<sup>2</sup>

Received: 5 June 2020 / Accepted: 22 September 2020 / Published online: 11 October 2020  
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## Abstract

**Aim** The purpose of this study was to evaluate the effects of an interprofessional education (IPE) intervention on undergraduate health professions students' current interprofessional awareness and understanding, and intent to interprofessionally collaborate.

**Subject and methods** This mixed methods study ( $N = 50$ ) consisted of undergraduate community health nursing ( $n = 42$ ) and health education ( $n = 8$ ) students at a Midwestern, urban, public university. Undergraduate health professions students were invited to the IPE event co-hosted by the researchers. The session began with introductions, after which students completed a consent form and then watched a series of six brief videos, which were created by the researchers, illustrating how various disciplines collaborate in a public health department. The videos were followed by discussion, after which participants were divided into groups and given one of two case studies to work on, followed by large group discussion, after which participants completed the evaluation. Quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS); qualitative data underwent thematic analysis.

**Results** The results showed that the majority of participants felt that their interprofessional awareness, understanding, and intent to collaborate increased. The findings also revealed what they learned, misconceptions they had about the disciplines that were clarified, and what they felt was most helpful.

**Conclusion** This research provides support for the effectiveness of a brief, collaborative IPE intervention in increasing health professions students' interprofessional awareness, understanding, and intent to interprofessionally collaborate.

**Keywords** Interprofessional education · Interprofessional collaboration · Public health · Interdisciplinary studies · Health occupations

## Introduction

Various undergraduate health professions students are required to complete practicum hours, an internship, or a field experience in community/public health. A health department is a placement option; however, placements are limited and

competitive. Since many health professionals work collaboratively in health departments, the authors wanted to provide this experience in an interprofessional format by jointly conducting an interprofessional education (IPE) intervention and inviting undergraduate community health nursing, public health education, social work, and dietetic students to participate. Additionally, the authors wanted to assess the effects of this IPE intervention on students' interprofessional awareness and understanding, and intent to interprofessionally collaborate.

According to the Centre for the Advancement of Interprofessional Education (2019), IPE involves two or more professionals learning with, from, and about each other, in an effort to improve collaboration and the quality of healthcare. IPE is needed to prepare a healthcare workforce that is ready to practice collaboratively and be better equipped to respond to local health needs (World Health Organization 2010). Interprofessional collaboration is essential for improving

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✉ Jenni L. Hoffman  
jhoffm26@emich.edu

Joan E. Cowdery  
jcowdery@emich.edu

<sup>1</sup> College of Health and Human Services, School of Nursing, Eastern Michigan University, 336 Marshall Building, Ypsilanti, MI 48197, USA

<sup>2</sup> College of Health and Human Services, School of Health Promotion and Human Performance, Eastern Michigan University, 318 Porter Building, Ypsilanti, MI 48197, USA

healthcare of individuals and populations, reducing healthcare costs, and achieving Healthy People 2020 goals and objectives, e.g., pertaining to the topic of Educational and Community-Based Programs (Addy et al. 2015). Social IPE activities can improve health professions students' understanding of other professions' roles, as well as their perceptions of other professions (White et al. 2019). Public health has an important role in advancing IPE; however, it is usually underrepresented in IPE initiatives (Uden-Holman et al. 2015).

Health professions schools' curricula are often based on their respective professional accrediting and credentialing bodies. As such, this IPE intervention met several of these professional competencies. For example, collaborative interprofessional practice is a baccalaureate competency for public health nursing as it relates to Essential VIII: Professionalism and Professional Values of the Essentials of Baccalaureate Education for Professional Nursing Practice (American Association of Colleges of Nursing 2013). This also addresses the Quality and Safety Education for Nurses competency of Teamwork and Collaboration, which includes functioning successfully on interprofessional teams (QSEN Institute 2019). Another example is the public health education program curriculum, which is designed to meet the National Commission for Health Education Credentialing (NCHEC) guidelines. This IPE intervention addressed Area of Responsibility VI: Serve as a Health Education/Promotion Resource Person, 6.3 Provide Advice and Consultation/Establish Consultative Relationships (NCHEC 2015). Additionally, the Interprofessional Education Collaborative (IPEC) (2016) has established competencies for interprofessional collaborative practice to guide curricula development across health professions' educational programs. The IPEC competencies addressed were: Roles and Responsibilities; Interprofessional Communication; and Teams and Teamwork (2016).

The conceptual framework applied to this study is the Interprofessional Learning Continuum Model. The learning continuum component pertains to foundational education and includes developmental learning across undergraduate health professions students. The component of enabling or interfering factors includes professional culture and institutional culture. The learning outcomes component includes reaction, attitudes/perceptions, knowledge/skills, and collaborative behavior, and the health and system outcomes component includes individual health and population/public health (National Academies of Sciences, Engineering, and Medicine 2015). It is essential that health professions students be provided IPE opportunities to help them improve their awareness and understanding of other healthcare disciplines, and the importance of collaborating with other healthcare professionals for improving the safety and quality of healthcare.

## Materials and methods

This study utilized a mixed methods design to assess the effects of an IPE intervention consisting of videos, case studies, and discussion on student interprofessional awareness and understanding, and intent to interprofessionally collaborate. University institutional review board (IRB) approval was obtained. Purposive sampling was utilized. The study sample ( $N=50$ ) included undergraduate community health nursing ( $n=42$ ) and health education ( $n=8$ ) students at a Midwestern, urban, public university. Evaluations were administered to participants that assessed the effectiveness of the IPE intervention. The evaluation was independently developed by the researchers. Content validity was established by experts, besides the researchers, in their respective fields. Data collected included: academic program; location of practicum or internship; any prior experience with IPE; helpfulness of the videos and case studies; impact on interprofessional awareness, understanding and intent to collaborate as a result of participating in the IPE event; information learned from the event; misconceptions they may have had about their discipline or one of the others that were clarified; what they found most helpful about the event and why; and any additional comments or suggestions regarding the event. Pertaining to the quantitative questions on the evaluation, aside from demographic questions, the researchers used a three-point scale for determining the helpfulness of the videos and case studies, and impact of the educational intervention on their interprofessional awareness, understanding, and intent to interprofessionally collaborate.

Undergraduate community health nursing, public health-community health education, social work, and dietetic students were invited to the IPE event, which took place during a designated community health nursing class winter 2019 semester. Although there were social work and dietetic students who signed up for the event, only community health nursing and public health-community health education students participated in the event. Incentives were offered. All students had the opportunity to sign up for learning beyond the classroom (LBC) credit, of which a certain amount is required of all undergraduate students at the university. Also, all students had the opportunity to sign up for IPE Passport which provides a certificate of attendance for IPE events and after a certain number are attended, students receive a special letter of acknowledgement from the Dean (both of which can be included in a health professions student's portfolio and shared with potential employers during interviews). Additionally, students were offered complimentary refreshments (pizza, water, soda). The session began with an introduction by the researchers who described their disciplines, the study, IPE, and explained the outline of the session (the sign-up sheets for LBC credit and IPE Passport were also distributed and students were invited to help themselves to refreshments). All

students had the opportunity to consent to participate in the research study but were not required to do so. Agreeing to participate in the study provided consent for the researchers to use case study, evaluation, and researcher observation data for research purposes. Once consent was obtained, participants watched a series of six brief videos (ranging from approximately 3–6 min each) that were created by the researchers illustrating how various disciplines collaborate in a public health department. Public health professionals from the health department were asked to describe “a day in the life” of their profession and an example of how they work together.

The first video showcased a dietician, a social worker, and a nurse, and the example of how they work together in the Maternal Infant Health Program (MIHP) (Hoffman et al. 2019a). MIHP is a home visiting program for pregnant women and their infants who have Medicaid insurance, and includes education, coordination of services, support, and referrals (Health Department Washtenaw County Michigan n.d.-a). The second video showcased two nurses and a social worker, and how they work together in the Children’s Special Health Care Services (CSHCS) Program (Hoffman et al. 2019b). CSHCS is a program that helps pay for specialty medical bills and coordinates services for children and adults that have certain eligible medical conditions (Health Department Washtenaw County Michigan n.d.-b). The third video showcased a nurse and a health communications specialist, and how they work together in the community health promotion division, an example being their recent Hepatitis A outreach campaign (Hoffman et al. 2019c). The fourth video showcased a nurse, a social worker, and a nurse practitioner, and how they work together in the sexual health clinic (Hoffman et al. 2019d). The fifth video showcased a health educator and a nurse, and how they collaborate in the Wise Choices Program (Hoffman et al. 2019e). This program helps county residents make healthy lifestyle changes by setting small goals, and provides free health screenings and coaching (Health Department Washtenaw County Michigan n.d.-c). The sixth video showcased an environmental health specialist and a nurse, and how they work together on foodborne illness investigations (Hoffman et al. 2019f).

The videos were followed by discussion, after which participants were placed into groups, ensuring there were health education students in each group. Participant recorders were selected so that data could be collected and subsequently reviewed by the researchers. Each group received one of two case studies: (1) staff from a local health department representing public health nursing, health education, dietetics, and social work disciplines working together to put on a health fair at a local mall, or (2) a public health nurse and a health educator from a local health department working together to provide sexually transmitted disease (STD)/sexually transmitted infection (STI) and pregnancy prevention education in a local high school. The case study questions were answered in

the discussion that followed, after which participants were instructed to complete the evaluation. The researchers collected the consent forms, case studies with responses, and evaluations. The event lasted approximately 2 hr, after which the researchers debriefed the event. Data were subsequently reviewed by the researchers. Quantitative data were analyzed using Statistical Package for the Social Sciences (SPSS) version 25.0. Qualitative data underwent thematic analysis.

## Results

Slightly less than half of the participants (48%) indicated their practicum or internship was at a health department. The majority of participants found the videos to be somewhat helpful (64%) or very helpful (22%) and the case studies to be somewhat helpful (54%) or very helpful (44%). Participants indicated that as a result of participating in this event, their interprofessional awareness increased (52% somewhat agreed and 48% strongly agreed) and the majority of participants indicated their interprofessional understanding increased (50% somewhat agreed and 48% strongly agreed). Participants also indicated that their intent to interprofessionally collaborate increased (50% somewhat agreed and 50% strongly agreed).

In looking at the qualitative data, regarding the question of what if any prior experience with IPE participants had, the theme of not applicable or none was noted most often (62%), followed by prior simulation experience (32%), e.g., “Large scale interdisciplinary simulation,” and the theme of work experience (6%), e.g., “When working as a pharmacy technician, we would have to work with the dietitians, pharmacist, and nursing closely.”

In response to the question of what they learned from the IPE event that they did not know before, the following theme was noted: learned about interprofessional collaboration and how to effectively collaborate. Examples of participant responses included: “I did not know so many different health majors collaborated on a daily basis;” “How to effectively collaborate with other healthcare professionals;” and “Before the IPE event, I didn’t know that many professionals collaborate with each other. For instance, the collaboration with nurses, social workers, and dietitians.” Also, the following theme was observed: individual health professional roles, e.g., certain participants specifically noted learning about what dietitians and health communications specialists do. Additionally, the theme of the health education major, purpose, and role was noticed. Examples of participant responses included: “What health educators do;” “I did not know there was a health education program;” and “That health education existed as a profession.”

With regard to the question of what if any misconceptions they may have had about their discipline or the other disciplines that were clarified, the theme of individual health professional roles was noted. Examples of participant responses included:

“Social workers and the capacity they acted in;” “I did not really think about nurses dealing with environmental issues;” and “I didn’t know what the roles of health education were.” In addition, the following theme was observed: interprofessional collaboration, specifically not realizing how much the health professionals worked together, and surprised by the overlap between disciplines. Examples of participant responses included: “That we work with and not just alongside;” “Surprised by how much we overlap;” and “How interconnected the nursing field is within all departments.”

Regarding what participants found most helpful, the theme of case studies was noted. Examples of participant responses included: “The case studies because I got to apply what I learned;” “The case study because it was the first time I have worked with other health care professionals;” and “I loved the case study. It allowed us to use our knowledge and apply it.” The following theme was also observed: the application of collaboration. Examples of participant responses included the following: “We each bring our own expertise from our respective fields and work together to address an issue on an individual/community basis;” “Working in groups with other disciplines;” “Working with students from other disciplines. It exposed me to their area of study;” and “Interacting with public health educators because I’ve never had that opportunity.” Additionally, the theme of discussion was noticed, with certain participants specifying the discussion component.

Relating to the question of any additional comments or suggestions regarding the IPE event, the theme of appreciation was noted. Examples of participant responses included: “This was a lot of fun. Can’t wait to do it again;” “Thank you!;” and “It went over very well.” The following theme was also observed: more disciplines involved. An example of a participant response included, “More disciplines involved. This was basically only nurses.” In addition, the following theme was noticed: videos (technical difficulties and volume), e.g., certain participants noted there were some viewing glitches and the volume could be louder.

Researchers’ observations of the students’ discussions included that the mixed participant groups were focused, seemed to take the exercise seriously, and were engaged in the exercise/case studies. Various participants also approached the researchers after the event and expressed that they felt it was a great event, was presented well, was very effective, and that the videos and case studies were very helpful, indicating that it was especially helpful to see different examples of various disciplines working together and the options available in public health.

## Discussion

The results of this study indicate that the IPE intervention was effective. The event brought an example of the health

department experience to the students and demonstrated its interprofessional nature. According to the conceptual framework, Interprofessional Learning Continuum Model, the IPE exposure intervention provided students with knowledge about the teamwork between nurses, health educators, social workers, dieticians, and environmental health personnel in a health department, and allowed them to contribute to interprofessional communication and learn from reflecting on/reacting to the experience, thus impacting knowledge, behavior, and skill.

The literature identifies the significance of public health in IPE, though it is underrepresented (Uden-Holman et al. 2015). This study indicates that a brief, collaborative IPE intervention can be successful in addressing both of those issues. This study improved IPE provided to health professions students by exposing them to an example of interprofessional collaboration in public health. This type of intervention can be used to address the lack of representation of public health in IPE initiatives. Providing the students with this unique IPE exposure opportunity helped improve their education and preparation for collaboration in practice, and also addressed the need for more IPE in health professions students’ educational programs.

More research can be conducted in this area. The researchers plan to utilize the videos created for this project with students in future community/public health courses. Future plans include expanding this project with additional disciplines and settings in community health. Potential limitations to this study could include the lack of representation of social work and dietetic students (despite advance invitation and all students offered incentives) as well as the less proportionate number of public health education compared to community health nursing students (although nursing and health education disciplines were represented in all groups, additional public health education students in each of the groups could have increased their representation and strengthened the effects of this intervention). Another limitation could include minor technical difficulties experienced while showing the videos due to interference from the University’s computer/media equipment.

## Conclusion

This mixed methods study provides support for the effectiveness of a brief, collaborative IPE intervention in increasing health professions students’ interprofessional awareness, understanding, and intent to interprofessionally collaborate. The participant feedback shows support for the appreciation and usefulness of this information. This research advances the science by helping to improve the IPE provided to health professions students.



**Author contributions** Jenni L. Hoffman, DNP, RN, FNP-C, CLNC, FAANP (first author)– coordinated research project, IRB submission, data collection, data analysis, drafted and edited manuscript, and manuscript submission.

Joan E. Cowdery, PhD (second author)– data collection, data analysis, and edited manuscript.

**Funding** This work was supported by Eastern Michigan University College of Health and Human Services Interprofessional Education Office through an internal research award.

## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

**Ethical approval** This study was approved by the Eastern Michigan University Institutional Review Board.

**Informed consent** Informed consent was obtained from all participants in the study.

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