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An Investigation of Interprofessional Education on Interprofessional Collaborative Competencies: A Mixed-Methods Study

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Background and Significance: Effective interdisciplinary health care teams were not described in the literature until World War II. Following the end of the war, pioneering physicians introduced interdisciplinary teams of health care workers in clinics for low-income areas for underserved populations (Baldwin, 2007). President Johnson advocated for the development of teamwork in primary care in his vision for the 'Great Society' (Baldwin, 2007). The Institute of Medicine convened a task force entitled, "Education for the Health Team" (Pellegrino, (1972).

Despite decades of progress, there remain significant barriers to interdisciplinary communication within the healthcare team. As evidenced by the plethora of literature regarding horizontal and vertical violence in the healthcare setting, we clearly need to foster more opportunities across disciplines within the education setting to provide a safer patient-centered U.S. health care system (Interprofessional Education Collaborative Expert Panel, 2011).

Hodges and Massey (2015) chronicled a descriptive study focused on the learning gains and satisfaction of undergraduate baccalaureate science nursing (BSN) students and prelicensure Doctor of Pharmacy (PharmD) students through the development of problem-based learning (PBL) pedagogy. They used self-assessment Likert scales to measure perceived satisfaction with the learning process and the addition of narrative comments. They concluded the IPE-PBL promoted an appreciation for the others discipline's perspective.

Knecht, Puia, and Riccardi (2017) conducted a mixed methods pilot study of 80 pharmacy students and 46 nursing students using a case study based approach. Quantitative pre-and post test data were collected using the, *Interprofessional Collaborative Competencies Attainment Survey (ICCAS)* (Archibald, Trumpower, & MacDonald, 2014). Qualitative data was collected through a written self-reflection in which the students were asked to describe their thoughts and feelings of participating in an IPE experience. Results indicated a single IPE event, with as little as two disciplines, can increase the self-reported competency of interdisciplinary collaboration. Nursing student scores revealed sustained levels of competency one month after the IPE.

The World Health Organization (WHO) has provided the operational definition for IPE: "IPE occurs when two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes" (WHO, 2010). "The goal of this interprofessional learning is to prepare all health professions students for *deliberatively working together* with the common goal of building a safer and better patient-centered and community/population oriented U.S. health care system" (Interprofessional Education Collaborative Expert Panel, 2011, p. 3). More evidence is required to optimize the pedagogy of IPE.

Purpose: A mixed methods study will be conducted to determine a) the difference in the self-reported competencies of interprofessional care among pharmacy, nursing, nutrition, social work, and physician assistant students who participate in a course integrating IPE (Interprofessional Education) and b) the meaning of the experience of participating in an IPE course.

Theoretical Framework: The Core Competencies for Interprofessional Collaborative Practice (2011) adopted by the AACN was used as a guiding framework.

Design: A convergent parallel mixed-methods study will be conducted. The quantitative data will be collected using a validated instrument, *Interprofessional Collaborative Competencies Attainment Survey*(ICCAS) (Archibald, Trumpower, & MacDonald, 2014) in a quasi-experimental pre-test/posttest design. The qualitative data will be gathered during focus group interviews after completion of the IPE case study.

Sample: A convenience sample of approximately 50 senior baccalaureate nursing students, 40 second-year pharmacy students, five senior baccalaureate nutrition students, five graduate level social work students, and 30 second-year physician assistant students will be recruited. The students will all be enrolled in courses in a small private Catholic university in New England.

Method: The IPE will be conducted on two cohorts. Each cohort will have a new sample of pharmacy students, but all other disciplines will remain the same for both IPEs. Pre- and post- IPE data will be collected using the *Interprofessional Collaborative Competencies Attainment Survey* (ICCAS). Students will randomly be assigned to small work groups, with an equal mix of pharmacy and nursing students. Nutrition, social work and physician assistants will rotate among the work groups on a consulting basis. During each IPE, the students will complete an in-depth case study analysis and answer a series of questions, problem solve and develop a plan of care. Two or three student research assistants (RAs) will be recruited to assist with data entry into SPSS. Analysis of quantitative data will be conducted using descriptive statistics, T-tests and ANOVA. A series of focus groups will be conducted with a representative sample of student volunteers. The focus groups will be moderated by a faculty member while the student RAs will record data. The focus group interviews will be transcribed by the research team. The qualitative data will be analyzed by faculty and student RAs using Krippendorff's (2004) method for content analysis. Responses will be clustered to allow themes to emerge.

Results: Will be disseminated at local and national conferences and submitted for publication in a peer reviewed journal.

Outcomes & implications: The results of this study will add to the body of knowledge related to IPE and interprofessional collaborative competencies. Furthermore, the results will inform future IPE courses.

Title:

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Keywords:

Interprofessional Education, Mixed-Methods Research and Multidisciplinary Education

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Abstract Summary:

An interdisciplinary experience was developed by faculty in nursing, pharmacy, physician assistant, nutrition, and social work for students using a case study-based approach. Quantitative pre-and post test data were collected using the, Interprofessional Collaborative Competencies Attainment Survey (ICCAS). Qualitative data will be collected via focus groups.

Content Outline:

I. Introduction- Interprofessional Education (IPE) is a pedagogy that is being promoted

A. The goal is promote an environment in which students must deliberately work together to foster future collaborative practice. Little evidence exists on best practice for this pedagogy

B. Little evidence exists on best practice for this pedagogy

II. A Mixed-Methods study has been developed

A. Disciplines will include nursing, pharmacy, physician assistant (PA), nutrition, and social work.

B. Case studies have been developed to foster the interaction between senior nursing students, second-year pharmacy and PA students, and pre-licensure nutrition and social work graduate students.

C. Topics include: Care of the patient with diabetic ketoacidosis and care of the patient with a burn injury.

D. The purpose is two-fold: to determine a) the difference in the self-reported competencies of interprofessional care among pharmacy, nursing, nutrition, social work, and PA students who participate in a course integrating IPE and b) the meaning of the experience of participating in an IPE course

III. Conclusion

A. The results of this study will add to the body of knowledge related to IPE and interprofessional collaborative competencies.

B. The results will inform future IPE courses.

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Professional Experience: 2008- Present- Faculty University of Saint Joseph Teaching: • Provide classroom content and clinical practicum for advanced medical-surgical and critical-care component of Undergraduate Baccalaureate Program. • Provide content area of courses offered including Community Health, Nursing Philosophy, Contemporary Issues and Trends in Nursing, and Nursing Research at the Undergraduate level. • Faculty advisor to community outreach programs in Hartford: Oversee students in service learning throughout the curriculum at Charter Oak Health Center and Charter Oak Mobile Van, Catherine's Place, Manna Community Meals, Hands on Hartford Food Pantry, Malta House of Care, and House of Bread. Facilitate programs throughout the calendar year.

Author Summary: Janet was a critical care clinical nurse specialist for twenty years before becoming a faculty member almost ten years ago. She has been working with senior nursing students in an undergraduate nursing program in central CT. She has developed pedagogy related to service learning both in her community and globally working with the Pan American Health Organization in South America. Janet is now working to advance Interprofessional Education.

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Professional Experience: 2013-present faculty University of Saint Joseph. Teaching-provide classroom content across the undergraduate curriculum. Content areas include Foundations of Professional Nursing, Health Assessment, Maternity, Nursing Research, and Contemporary Issues and Trends. Responsible for the initiation and coordination of yearly diaper drive (2015-present). Have raised over 24,000 diapers for Hartford area food pantries and the Connecticut State Diaper Bank.

Author Summary: Clinically Denise has over 25 years as a labor and delivery nurse. Since coming to the University of Saint Joseph Denise has taught in all undergraduate programs at every level. She has explored pedagogical approaches and is currently working to increase interdisciplinary education.