

ORIGINAL RESEARCH

Collaborative online international learning in pre-licensure nursing: A case study

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ABSTRACT

Background: Despite the many noted benefits of collaborative online international learning (COIL) projects, it has rarely been used in nursing education. Nursing curricula must employ multiple strategies to prepare graduates for professional practice. With COIL's benefits, its application to nursing education should be explored.

Methods: A qualitative case study approach guided by social constructivist theory was used to assess the impact of COIL on pre-licensure students' understanding of community/public health nursing, and the impact on preparedness for practice. 10 participants completed COIL projects and two surveys.

Results: Three themes were identified: enhanced perspectives of public health issues/practices/interventions; enhanced knowledge; and broadened understanding of role and scope of practice. 10 participants noted an impact on preparation for professional practice. 7/10 demonstrated a difference in definitions of community/public health nursing.

Conclusions: Further inclusion in pre-licensure curricula should be explored, particularly for its potential impact on preparation for professional practice.

Key Words: Collaborative online international learning, Community health nursing, Professional practice, Preparedness, Public health nursing

1. INTRODUCTION

It is well-documented that collaborative online international learning (COIL) projects are crucial in higher education due to the opportunity provided for: enhanced understanding of various cultures, reflection and personal growth, enhanced understanding of specific issues/topics, and an enhanced global perspective. While these are all also noted benefits of study abroad, COIL provides these same benefits without the expense and time of study abroad. Despite these demonstrated benefits, COIL has rarely been used in nursing education. All nurses, by virtue of the profession, are tasked with serving the public and effecting health outcomes. Pre-licensure nursing curricula employ a variety of teaching and learning

strategies to prepare graduates with the knowledge, skills, and attitudes necessary for professional practice, including use of didactic courses, clinical experiences, simulated patient scenarios, and more. With the number of demonstrated benefits to COIL, its application to nursing education should be explored to enhance both student understanding and preparation for practice.

Nursing as a profession is evolving and expanding into varied environments, due in large part to an aging patient population with multiple comorbidities, many chronic. This is forcing provision of care into the home, into schools, into the community, and beyond as nurses must pivot to care not just for individuals, but for entire communities. The importance

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of and focus on public health is more important than ever before. Public health nursing, as defined by the American Public Health Association^[1] (p. 2), is the “practice of promoting and protecting the health of populations using knowledge from nursing, social, and public health sciences.” Situated on the spectrum of public health nursing is the community health nurse, who addresses complex health issues of individuals, groups, and entire communities through direct and public health care practices. The two nursing practice areas are distinct yet overlap. For the purposes of this project, the terms *public health* and *community health* nursing are used interchangeably.

Nurses are not choosing community/public health nursing as their primary area of practice in numbers that meet the demands of the population. The 2022 National Nursing Workforce Survey^[2] demonstrates that of RNs in the US, 57.5% are employed in hospitals, with only 1.7% and 2% employed as public and community health nurses respectively. This disparity is significant, particularly in light of the growing need for community/public health nurses. This trend is not exclusive to seasoned nurses but is also seen in new graduate nurses. New graduate nurses often do not choose community/public health practice for reasons that include: a lack of appeal of the work; frustration over length of time needed to see visible outcomes of work; lack of understanding of the practice itself; salary; and lack of clarity surrounding the role based on misleading didactic and clinical experiences in nursing curricula.^[3–5] The role of nursing schools in exposure to and understanding of this crucial field is critical to graduates. The significance of the work and need for practitioners begs for change in nursing curricula to help address the disparity. COIL projects, with their demonstrated enhanced perspectives and enhanced understanding, should be explored in nursing education as a means to address the deficit in a meaningful way. This project, therefore, seeks to determine the impact of COIL projects on pre-licensure nursing student understanding of community/public health nursing, and to determine the impact on pre-licensure nursing student self-reported preparedness for professional nursing practice.

2. BACKGROUND

2.1 COIL

To address the issues related to public health nursing in nursing education, we can look to the COIL model.^[6] The COIL model was introduced in 2004 with the goal of expanding world views by connecting students across the globe in engaging learning experiences that provide a chance for reflection on different cultures and practices. COIL pairs students in the US with students abroad through virtual/online

platforms to conduct projects to better understand varied global perspectives and practices. Through this process, students confront biases and educate themselves on differing cultures. There is an added reflection component that tasks students with considering their own thoughts, feelings, and any changes in thinking or new skills attained. It is a realistic alternative to studying abroad, a process that can prove to be immensely expensive. Asojo^[7] reports that only roughly 16% of students were able to participate in study abroad programs between 2016-2017. With so few studying abroad, classrooms are forced to become the primary source of real-life experience. COIL thus becomes an affordable alternative to study abroad, as it provides a path for students to learn and to develop “intercultural sensitivity” remotely. Cultural sensitivity, understanding, and competence are all required of nurses in order to provide quality and safe patient care, and prepare them for professional practice. COIL and its resultant cultural sensitivity, understanding, and competence, forces students to confront bias and learn from it.

2.2 COIL and nursing

The COIL model can be applied to a variety of industries and fields of study. The COIL model creates a well-rounded understanding of focused topics within specific communities. This is of significant benefit to nursing, where many diverse communities and social issues complicate population health and overall healthcare provision. In a profession that requires direct interaction among different types of people, COIL teaches an array of approaches to these interactions. de Castro et al.^[8] suggested that COIL also offers nursing students an opportunity to practice culturally sensitive communication prior to entering professional practice. This is invaluable preparation for the requisite culturally competent care of professional practice.

Despite its demonstrated benefits, COIL is a program that has seen little utilization in nursing. The paucity of literature describing the intersection of the two identifies a significant opportunity for further research. The limited resources that were identified suggested several anticipated benefits, such as enhanced cultural competence and sensitivity, strengthened knowledge, and an enhanced global perspective.^[6, 8–12] Other benefits noted in nursing included strengthened collaboration skills, new and enhanced perspectives of own and other health care systems, as well as an enhanced understanding of the role of the nurse.^[9, 11, 13] Of particular note, were the outcomes depicted by Jenssen et al.^[13] who argued that introducing programs like COIL in nursing curricula are key in order to enhance population health awareness and to address health inequities/disparities. Bragodottir & Potter^[11] argued that health itself was an interconnected global phenomenon,

with the health and practices of one nation impacting others. The authors further asserted that COIL provided the opportunity for local health problems to benefit from the knowledge and practices of others around the world, perpetuating the understanding that nursing and healthcare are both global concepts. These findings were echoed by House et al.^[9] who further suggested that COIL not only encourages examination of other healthcare systems but enhances scrutiny and understanding of one's own healthcare system. The authors further suggested that COIL allowed participants the opportunity to build on their understanding of the overall role of nurse.

2.3 Public health initiatives and nursing

Public health nursing traces its roots back to ancient Roman times, where care for the poor and sick laid the foundations and cultured underlying principles seen in public healthcare today. This work set the stage for foundational nursing health leaders like Florence Nightingale and Dorothea Dix, who revolutionized healthcare in their times. This crucial work has continued through the years in the US and across the world, with recent public health initiatives championed by public health nurses that includes broad vaccination and immunization efforts, tobacco use reduction, cardiovascular disease prevention, and improved access to healthcare.^[14, 15] The scope and responsibility of public health nursing is vast and overwhelming, but crucial to the evolution and health of society as a whole.

Today public health nurses are tasked with effecting health change in populations, not just individuals, and this change begins at the community level. Community/public health nurses are challenged to work in increasingly complex, technological, and overtaxed healthcare systems, often with limited resources. This work seeks to align health structures, resources, knowledge, and health movements toward a common goal of population health by focusing on the care of the family, community, and population.^[16] This is guided by an overarching understanding of the health and illness continuum and health systems that are complex and ever-changing. Public health efforts involve patience and the appreciation of the overall "big picture" of population health, with consistent movement toward common goals. In the US, much public health effort is guided by the work of Healthy People 2030 (HP2030).^[17] HP2030 is a set of goals and objectives determined by a group of over 20 federal government agencies, designed to guide national health promotion and disease prevention efforts. The goals are revised and refocused every ten years to reflect current issues, needs, technologies, and healthcare trends. Chief among the HP 2030 goals is the challenge to "attain high quality, longer lives, free of pre-

ventable disease, disability, injury, and premature death".^[17] Nurses are perfectly positioned to lead public health efforts, as they have consistently and historically addressed sources of public harm, promoted strategies to protect vulnerable citizens, and advocated for policy change to promote and protect health.^[28]

3. METHODS

3.1 Design and sample

This study utilized a qualitative case study approach to assess the impact of a COIL project on pre-licensure nursing students' understanding of community/public health nursing, as well as its impact on their self-reported preparedness for professional practice. Participants were purposively sampled from the Obstetrics/Pediatrics nursing course of a second degree, direct entry pre-licensure nursing program at a private Jesuit university in the Midwest United States. There were 11 students enrolled in the Spring semester of the course, and all 11 elected to participate. All 11 participants completed the initial phase of the project; however, one student withdrew from the course midway through the semester, yielding a final sample of 10 participants.

3.2 Theoretical approach

This case study employed a social constructivist approach. Social constructivism^[18] posits that knowledge is constructed through human social interactions as opposed to simply being determined by factors internal to each learner. Central to Vygotsky's theory is the tenet of the zone of proximal distance, wherein the instructor facilitates social learning activities for the learner as opposed to simply providing the information to the learner. The zone of proximal distance allows the student to master concepts and proficiencies that would not have been achievable through individual knowledge formation.^[19] Schreiber and Valle further asserted that social constructivism provided a platform for learning in which participants share their own worldviews and perspectives, which can enhance both learning and understanding of varied cultures.

3.3 Context and details surrounding the COIL projects

Healthcare spending in the United States (U.S.) is likely the most significant epidemic to hit the healthcare industry in modern times. Healthcare spending has risen faster than inflation, incomes, and the economy, and as of 2020 represented roughly 18.8% of the US gross domestic product.^[20] The US healthcare system is the most expensive in the world, with spending at approximately \$12,555 per capita as of 2022. This figure is roughly double the average of Organization for Economic Cooperation and Development (OECD) members.^[20-23] Despite this, poor health outcomes, including

shorter life expectancy and a greater prevalence of obesity and other chronic conditions, persist in the US.^[22,24]

Infant mortality rate (IMR) is a prominent example of the impact of health disparities in the U.S. IMR is calculated as the number of infant deaths per 1000 live births in the first year of life. While the U.S. IMR has seen improvement over the last few decades, with a rate of about 5.614 in 2021, it still does not align with its fellow worldwide industrialized nations, nor does it align with the exorbitant medical spending seen. The OECD, representing a collaborative of governments from market-based economies joined to promote global economic growth and policy, has 38 member nations. The U.S. is ranked 33rd of the 38 countries with respect to IMR.^[25,26] This poor IMR is marked by even more stark data, with black infants having significantly higher mortality rates (IMR = 10.8) than white infants (IMR = 4.6), and similar outcomes seen when comparing IMR with socioeconomic status.^[27] In contrast, the IMR in Finland is among the best in the world with a rate of 1.479 deaths per live births.

Another example of prominent health disparities in the U.S. is seen in the health of children five years of age and younger. Children five years of age and younger in the U.S. have considerable health risks and high mortality rates, leading to additional healthcare costs in the U.S. as well as globally. According to the World Health Organization (WHO), 5 million children under the age of five died worldwide in 2020 from treatable and preventable causes¹⁵. The National Vital Statistics System reported 25 deaths in children ages 1-4 years per 100,000 people in the United States in 2021. In contrast, the number of deaths per 1,000 live births for children under five years in Finland was 2.2 in 2021.

These notable gaps in health outcomes between the U.S. and Finland provide the basis for rich reflection and learning surrounding public health issues. The selection of Finland and its students as participants for the COIL project was intentional, aimed at offering a contrast to practices and outcomes in the U.S., through which insights could be gained.

Arrangement of the project itself was initially complicated, with failed results received from the efforts to match with a partner through the COIL international website. Before the project was abandoned or revised, however, one of the authors had a chance encounter with a colleague who was from Finland. Through conversation, the colleague was able to connect the authors with the midwifery faculty in Finland. As the functions and roles of midwives in Finland overlap significantly with nursing roles in the US, the collaboration seemed appropriate. Conversations with the midwifery faculty in Finland yielded a strong desire on their part to not only collaborate but to meet the educational needs of both

groups of students. In the end, it was decided that through virtual international meetings on Zoom, the US students would gather information on pregnancy, childbirth, and early childhood health practices in Finland that contributed to their low infant mortality rates from the approximately 20 Finnish midwifery students. The US students were asked to take what they learned, research further, and create a presentation of actionable recommendations that would be provided to a local non-profit organization aimed at decreasing US infant mortality rates. For their part, Finnish students were asked to take the information learned on varied healthcare practices and research a specific topic, with the final culminating project resulting in a journal club presentation.

3.4 Instruments and data collection

As part of the OB/Peds course and its assignments, all students, regardless of study participation, were required to complete: a pre-project worksheet focused on the public health issue of infant mortality (see Appendix A); two focused COIL projects in collaboration with midwifery students from a university in Finland on the topics of infant mortality and a childrearing health topic; and a final qualitative post-survey regarding self-reported outcomes of the COIL experiences (see Appendix B). One item from the pre-project worksheet (#9) and the responses on the post-survey were utilized as data sources for the study. Students who elected not to participate in the study still had to complete these items as part of their course, but their data would not be collected as part of the study.

Pre-project worksheets and post-surveys were submitted using the corresponding course learning management system (LMS). Once all students had submitted the completed assignments to the LMS, a faculty member outside of the course graded them for completion. After grading, that faculty member removed all identifying information from the assignments, and each was assigned a random identification number by this same faculty member to maintain confidentiality of participants. The same participant number was assigned for each individual's pre-project worksheet and post-survey in order to link the responses by participant. The data sets were then given to the researchers for analysis.

3.5 Procedures

Students enrolled in the Obstetrics/Pediatrics nursing course were required to complete a COIL project as part of their assigned coursework. This COIL project focused on public health issues surrounding both childbearing and childrearing in the United States, specifically preventable factors impacting infant child mortality rates. Students completed a pre-project worksheet (Appendix A) containing items rel-

ative to their understanding of these public health issues, as well as an item pertaining to their personal definition of community/public health nursing. Following this, students participated in a series of three synchronous video calls with midwifery students in Finland to discuss country-specific differences in the public health issues and responses to them. Finland was selected specifically for its exceptional infant and childhood mortality rates, ranking second in the world for both. After the series of video calls were completed, students were tasked with reflecting on lessons learned and making group presentations of actionable recommendations. Upon completion of the presentations, students then completed a post-survey (Appendix B) relative to the impact and outcome of the COIL projects, as well as repetition of the same item pertaining to their personal definition of community/public health nursing.

Qualitative data were evaluated via two coding cycles. First cycle structural coding was completed to categorize responses to survey items. Once completed, second cycle pattern coding was completed to identify emerging themes. In addition, responses to the personal definition of community/public health nursing from both the pre-project worksheet and the post-survey were paired by the anonymous participant identifier and evaluated for difference in definition. Results of this analysis were evaluated for emerging themes.

3.6 Approval and consent

All research presented herein was approved by the Institutional Review Board at Xavier University (#22-042). Participants were recruited by a non-instructor faculty member. Prior to the presentation of the informed consent statement, the instructor of the course left the room. The approved informed consent statement was read to eligible participants by the non-instructor faculty member. Paper consent forms were dispersed and then collected by the non-instructor faculty member. Both the statement and the consent form were approved by the Institutional Review Board. The data sets were not released to the researchers until final grades were submitted for the course. Student data were deidentified before data analysis occurred.

4. RESULTS

Upon completion of coding the obtained data, three overarching themes were identified: enhanced perspectives of public health issues, healthcare practices, and their interventions; an enhanced foundational knowledge that encouraged critical thought and objectivity; and a broadened understanding of the nurse's role and scope of practice. Analysis of item #5 from the post-survey yielded results indicating that all partic-

ipants noted an impact on their preparation for professional practice through participation in the COIL project. Finally, analysis of the definition of community/public health nursing showed significant difference in 7/10 post-surveys.

4.1 Enhanced perspectives

All participants agreed that the COIL project enhanced their understanding of public health issues, healthcare practices, healthcare systems, and/or varied healthcare interventions. Repeatedly noted was the sentiment that the COIL project not only allowed for better understanding of the Finnish healthcare system and highlighted lessons to be learned, but it also provided a better understanding of the U.S. healthcare system. The juxtaposition of these disparate systems and sets of healthcare practices allowed for new insights into US healthcare that participants did not anticipate. This was highlighted in comments like *"These projects gave me a different perspective on the type of care we provide here in the US. It is a valuable lesson to learn about how healthcare differs in different countries and to realize that there is not only one way to do things."* This was further echoed by another participant who noted that *"... it is beneficial for us to reflect on the differences to evaluate the efficacy of care that is currently given in the U.S."*

Participants also commented that COIL projects provide the benefit of differing perspectives on public health issues. Thinking about these issues from multiple perspectives and through varied lenses afforded a richer understanding. This was evident in comments such as, *"The biggest benefits lie in the interaction with another countries healthcare students and getting different perspectives from the individuals as well as healthcare and community."* These opportunities *"serve as an eye opener,"* and serve participants by *"... opening the minds of the students to the bigger picture of healthcare."*

The COIL projects also provided the opportunity for enhanced perspectives on means of meaningful intervention. Participants commented that *"Generally I think collaborating with a country that has such drastic changes in model of healthcare has created increased awareness of just how many things could be changed at the microsystem level that could have positive impacts on the community I live and work in."* Fresh perspectives on interventions provided through COIL are invaluable and impactful to the community. *"... we can learn from each other to carry out best practice for our patients... by learning Finland's practices and evaluating our own we proposed various [new] ideas to Cradle Cincinnati... We provided evidence on the effects of implementation of these practices or interventions that we felt would benefit the community."*

4.2 Enhanced knowledge

Enhanced knowledge was another prominent noted throughout participant post-surveys. The COIL project provided not only foundational knowledge, but also highlighted lessons that were likely not accessible in traditional classrooms and learning experiences. This is best demonstrated by the participant comment *“The biggest benefit of projects like this for nursing students is the opportunity to learn first-hand knowledge that we may not be exposed to outside the classroom setting.”* This knowledge also allowed for and encouraged critical thought and analysis for future nursing practice, with one participant noting, *“I will be able to take this knowledge and be more critical and look for ways to change and improve the facility I eventually work in.”* Another participant further suggested that the COIL experience promoted an inquisitive approach to future practice with the statement that the project was able to *“impact how I view the dynamics of our healthcare system and how to question it more appropriately. Until I had learned about the drastic differences in healthcare policies and governance, I did not know exactly what to question as to why health discrepancies occur. I think this has made me a more inquisitive nurse.”*

4.3 Understanding of role

Participants continually remarked that the COIL project experience provided them with an enhanced understanding of the role of the nurse, particularly as an advocate for public health, emphasizing both health promotion and disease prevention. One participant noted that *“I believe that... public health nursing is the responsibility of not only nurses, but those who choose to pursue a career in healthcare all together. When choosing this, you assume the role of an advocate for your community.”* The COIL projects brought new understanding to the nature of the nursing role within the public healthcare system; *“The COIL project allowed me to see the impact of prevention and addressing social determinants of health on the health a population. I have a bachelor’s degree in public health, so I was already aware of the importance of public health interventions, but this project allowed me to see the nurse’s role in public and population health efforts.”* Ultimately, these lessons culminated for many in the understanding that community/public health nursing is a responsibility of all nurses, seen in statements such as, *“Public health nursing is a responsibility of all nurses because people do not exist in isolation and are affected by their physical and social environment. The environment also plays significant roles in the spread of disease conditions. The primary roles of the nurse can be summarized as comprising care for the sick, health education, and health care advocacy.”*

4.4 Preparedness for practice

All participants noted an impact on self-reported preparedness for professional practice through participation in the COIL projects. Many felt that the experiences provided insight into the challenges they would be encountering in professional practice, through statements such as, *“It has prepared me to address certain issues... and has further taught me how to look for potential factors that could be contributing to healthcare issues...”* Primarily, participants noted that this preparation for practice impacted them by highlighting information that they were previously unexposed to. One participant remarked that COIL projects such as these *“... build up curiosity in the minds of the students and encourage further inquiries and need-driven research on ways to mitigate the burden posed by the identified health challenges. These prepare the future public health nursing practitioner for an informed and objective approach to the health challenges in the population and makes for a more efficient health care advocacy role.”*

4.5 Definition of community/public health nursing

In analyzing the responses from the pre-project worksheet to the post-survey relative to definition of community/public health nursing, significant differences were seen in 7/10 responses post-COIL project participation (see Table 1). Most notably, the differences seen represented incorporation of education, advocacy, and health promotion/disease prevention as being key components of the community/public health nurse role. In the pre-project worksheet, definitions of community/public health nursing were very similar, and contained brief and direct statements such as *“Public health nursing is the aspect of nursing practice that is concerned with caring for the health of individuals at the level of the community.”* Significant differences were noted in 7/10 of the post-survey definitions, where participants were more detailed, and spoke to specific functions and roles. This was evident in statements such as *“To me, public health nursing means using knowledge of health practices, prevention and education... to promote a healthy lifestyle and to remain free from illness.”* Other participants echoed these same thoughts, including the notion that public/population health nursing is a responsibility of all nurses; *“Public or population health nursing involves focusing on the needs of a community or population, rather than an individual. Population and public health nursing also focuses on prevention and the implementation to improve the health of a population. Public and population health nursing is a responsibility of all nurses.”* One participant noted that public/community health nursing occurred *“... through client education, preventive health services, health promotion, healthcare policy, advocacy, and other nursing interventions that aim to op-*

imize the health and wellbeing of the population.” It was these distinguishing features of participant definitions in the

post-survey, completed after COIL participation, that spoke most significantly to the change in understanding of the core of public/community health nursing.

Table 1. Definitions of community/public health nursing

Participant	Pre-project definition	Post survey definition
1	“Population/public health nursing to me means providing easily accessible preventative and ongoing healthcare (including education) to the public. Most importantly, it is providing access to those who would not have the ability to receive such care.”	“Population/public nursing is a focus on creating as much access to quality healthcare to everyone despite socioeconomic, racial or social class concerns. Overall, population nursing simply means caring for and considering the population as a whole, noticing trends and using this knowledge to both fight for equal care and to provide direction on how to care for patients on an individual basis.”
2	“Population/ public health nursing is a branch of nursing that looks at patients from a public and community level rather than at the individual level. This division of nursing focuses more on what can be done to help a certain population of people to an even broader scale.”	“Public health is health at the public level simply put. It is health considerations that can affect the public/country. I believe public health nursing is the responsibility of all nurses. We are a part of the public and as nurses we already have the tools necessary to address public health therefore, we should.”
3	“Population and public health nursing focuses efforts on the population level, rather than the individual. Diabetes education centers, vaccination clinics, safe community/ environment initiatives are examples of population health nursing interventions. “	“Public or population health nursing involves focusing on the needs of a community or population, rather than an individual. Population and public health nursing also focuses on prevention and the implementation to improve the health of a population. Public and population health nursing is a responsibility of all nurses.”
4	“To me, population nursing means working to take care of and education of patients that are part of a specific population. I view it as less individual focused and more group focused to try to impact as many people as possible, for example, through policy change or teaching classes.”	“To me, public health nursing means using knowledge of health practices, prevention and education to pass along to the public to promote a healthy lifestyle and to remain free from illness.”
5	“Population/ public health nursing is providing and immersing oneself in the public of to find the necessary materials for communities needs to improve the health of the community, provide nursing care to those in need, and help in providing preventative measures in an attempt to get ahead of various health issues of the public.”	“My definition of population/ public health nursing would be taking an active interest in the welfare of others in a community through supporting the health and wellbeing of its members.”
6	“Public health nursing is the aspect of nursing practice that is concerned with caring for the health of individuals at the level of the community. Through client education, preventive health services, health promotion, healthcare policy advocacy, and other nursing interventions that aim to optimize the health and wellbeing of the population. “	“Public health nursing is the aspect of nursing practice that is concerned with caring for the health of individuals at the level of the community. Through client education, preventive health services, health promotion, healthcare policy advocacy, and other nursing interventions that aim to optimize the health and wellbeing of the population. “
7	“Public health nursing is the nursing that is done to help promote public knowledge about how to care for ones self and those around them.”	“Population/public health nursing is advocating and educating the community about health concerns as well as going into the community to support and treat a certain issue.”
8	“Population is who is being talked about or asked about. I think that public health nursing is nurses who help the public with correct care.”	“Public health nursing is promoting health all around you and the importance it has on everyone’s life.”
9	“The act of nursing care to provide to communities that are underserved and provide access to health care.”	“A nurse who goes out into the community to provide all levels of care (primary, secondary, tertiary) regardless of the demographics”
10	“Public health nursing includes the assessment, care, and treatment of populations which encompasses individuals, families, a community, organization, or an entire demographic. Public and population health nursing incorporates a lot of education based health care to promote wellness to the public.”	“My definition of population/public health nursing would entail the interest of health and welfare of the community or group of individuals.”

Notes. Definitions of community/public health nursing from pre-project to post-survey per participant are seen.

5. DISCUSSION

The results of the study suggest that student understanding of community/public health nursing was enhanced, as was preparation for professional nursing practice. As suggested in the research, findings indicated that participants obtained enhanced understanding of public health issues, health care systems, and practices,^[8, 13] and acquired enhanced knowledge and thought processes surrounding them.^[9, 12] Many of the participants reported that scrutinizing another country's approach to public health policy and health issues exposed the realities of these issues in the U.S., which was an outcome most participants were not anticipating. This in turn led to enhanced learning and an increase in knowledge as they were inspired to dig deeper and learn more about these specific topics in both countries.

Further, the intense scrutiny of another country's approach and the resultant comparison to U.S. practices deepened understanding of the community/public health nurse role. While this type of outcome was suggested in the literature surrounding COIL projects,^[9, 11, 13] it was interesting to see the mirrored development of this increased understanding for participants in this project. The participants were unprepared for the level of community/public health nursing practice in which most nurses in Finland participate, something they felt was in stark contrast to nursing practice in the U.S. This enhanced understanding of the community/public health nurse role aligned with the evolution in participant definitions of community/public health nursing from pre-project to post-survey. This evolution in definition is perhaps the most significant outcomes noted, as it directly impacts student readiness for professional practice. As nursing students lack general experience with and understanding of community/public health nursing, this project provided beneficial exposure resulting in positive learning outcomes.^[3, 4]

Participants also all reported an impact on their preparation for professional practice via the COIL project. Borne of the experience was a spirit of inquiry, but also one of advocacy. As they learned more about the IMR issue and community/public health nursing, they were reminded of the role of the nurse as advocate and leader. Additionally, they grew a deeper appreciation for soft skills which are necessary in successful professional practice, but often under-valued and under-utilized in pre-licensure educational experiences. These skills and the impetus to learn more are crucial to any successful and effective nurse.

Limitations

Limitations of the study were noted. First, the sample size ($n = 10$) was small and purposively sampled from one course at one university. In addition, the challenges of international

collaboration could likely have impacted outcomes. For example, there were some technological issues relative to the synchronous video calls between the participants and the students in Finland. Language barriers were also present, making it difficult the students to understand each other at times. Bias may also have been a factor as both researchers for the study are nurses with at least some background in public health practice. This could have impacted interpretation of findings and the resultant themes discussed. Another limitation lies in the nature of the study design itself. Qualitative case study design yields limited generalizability, reliability, and validity. Measures were taken to limit threats to validity and reliability, including transcript checking, code coordination and cross-checking, and acknowledgement of potential bias. Finally, the difference in student roles was likely a limitation. Student participants in the U.S. were pre-licensure nursing students in an OB/Peds course, whereas the students in Finland were midwifery students. While there is a significant amount of overlap between these roles across the two countries, there are also distinct differences.

6. CONCLUSIONS

COIL projects provide a multitude of benefits to students in varied disciplines. In many cases, these experiences provide an excellent opportunity for students to acquire knowledge and perspectives which they may only otherwise obtain from study abroad programs. Without the expense of study abroad, COIL projects also have the potential to enhance student learning and preparation for professional practice in a meaningful way. This case study demonstrates the impact of COIL projects on nursing knowledge, understanding and perspective of role and health, and on self-reported preparation for professional practice. To further understand these and other potential impacts of COIL projects in nursing education, further inclusion in pre-licensure curricula should be explored and thus further study is needed to determine the findings noted here. This innovative and cost-effective pedagogy may provide the key to equipping pre-licensure nursing students with the skills and knowledge necessary to practice in today's globalized healthcare landscape.

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AUTHORS CONTRIBUTIONS

Dr. Enslein and Dr. Moore were responsible for study design and revision, as well as primary writing of the manuscript. The student research assistant, Ms. Goodwyn, aided in the literature review. All authors read and approved the final manuscript.

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INFORMED CONSENT

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DATA SHARING STATEMENT

No additional data are available.

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