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International Community Engagement: Transforming Students and Residents

Colleen Walters and Ulochi Nwagwu

Abstract

In the 21st century, postsecondary education is increasingly shifting its curricular focus to include community engagement through service-learning and study abroad in response to the need to prepare global citizens. This approach is particularly important in the field of nursing and public health because of the challenges of delivering healthcare to underserved communities and diverse patient populations with complex and chronic conditions. At Clayton State University, an HBCU in Morrow, Georgia, courses across disciplines are infused with community engagement activities. One such course was a service-learning study abroad course for nursing students that took place in Guadalajara, Mexico. A pilot study was conducted using a mixed-methods approach. Results indicated that students experienced moderate to high perspective transformation through critical reflection, and participants at the health fair showed significant knowledge increase on four of the health topics presented by the students. An analysis of the students' reflective narratives showed themes of language acquisition competency, nursing skill competency to function in a foreign environment, and change in cultural perspective. This pilot study contributes to the body of knowledge on the impact that community engagement can have on a diverse population of students and the international communities served.

Clayton State University (CSU), in Morrow, Georgia, offers courses across disciplines that are infused with community engagement activities through the Partnering Academics with Community Engagement (PACE) program. Faculty are formally trained to facilitate community engagement, community partners are recruited, student learning is enhanced, and residents are expected to be positively impacted locally and internationally (Clayton State University, 2019a).

One such community engagement course was a service-learning study abroad partnership program in Guadalajara, Mexico composed of CSU, the University of Guadalajara, Hospital Civil of Guadalajara, and the Mentoring Engaging and Teaching All Students (METAS) organization for the blind. In May 2016, nursing students from the United States were immersed in Mexican culture and language through homestays, and by taking a Spanish language course at the University of Guadalajara. The community engagement components of the program involved hosting a health fair at Proulex (the University of Guadalajara's language center), participating in a clinical experience by working alongside nurses at the state hospital, and assisting METAS in the training of students at a school for the blind in Guadalajara. A mixed method pilot study was conducted to determine the impact of portions of this international community engagement course

on the student participants and the residents of the host country who attended the health fair. Students' reflective journals were analyzed and their level of critical reflection, as well as residents' knowledge on health promotion topics, were examined. The specific research questions guiding the study were: a) What degree of critical reflection and transformative learning do student participants experience on a service-learning study abroad program to Guadalajara, Mexico as a result of the community engagement activities? b) What themes emerge from the student participants' journal narratives that support whether transformative learning occurred? and c) Does the health promotion knowledge of resident participants of the host country increase because of the health fair?

Background

Community engagement is the "collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (Carnegie Community Engagement Classification, 2018, para. 4). From a public health perspective, the Centers for Disease Control and Prevention (CDC) defines community engagement as a process of collaboration among stakeholders with the goal

of building trust and improving communication and the overall health of a community (CTSA Community Engagement Task force, 2011). In successful community engagement projects, students have enhanced learning outcomes and community stakeholders meet specific goals. A key component of community engagement that facilitates student learning is reflection—the practice of critical appraisal of the community engagement experience (Amerson, 2012; Kohlbry & Daugherty, 2013; Walters, Charles, & Bingham, 2017).

Twenty-first century college students are expected to master theoretical content in their field of study, as well as to develop practical competencies to solve problems in their communities (The Civic Learning and Democratic Engagement National Task Force, 2011). These outcomes of higher education cannot be achieved if academia and the larger community function as silos that are independent of each other's influence. Starting in the 1980s, universities joined Campus Compact, an organization committed to refocusing the goal of higher education to meet the needs of the public through community engagement and to better prepare college graduates to become global citizens (Campus Compact, 2016). Thirty years later, more than 1,100 colleges and universities have implemented action plans to foster community engagement throughout the curriculum and to track the impact of their efforts (Campus Compact, 2016). Community engagement programs effect communities on different scales, from local to international partnerships.

Community engagement is particularly important in the field of nursing and public health because of the challenges in preparing students to positively impact the health of underserved communities, and diverse patient populations with complex and chronic conditions (CTSA Community Engagement Task Force, 2011). According to the United States Census Bureau (2011), the population is racially and ethnically diverse with a 45 percent increase in both Hispanic and Asian populations. Chronic illnesses—or non-communicable diseases such as heart disease, stroke, cancer, and diabetes—are the leading causes of mortality and morbidity worldwide. In 2005, 35 million people worldwide died from chronic diseases (World Health Organization, 2005). In 2016, that number had increased to 41 million (World Health Organization, 2016). The majority of deaths occurred in low- to middle-income countries among vulnerable populations, which are often

the destinations of many service-learning study abroad programs.

This was noted in several studies on community engagement with students in health science programs (nursing, occupational therapy, audiology, and physical therapy) participating in service-learning study abroad programs in low-income countries such as Belize, Dominican Republic, Guatemala, Ecuador, Mexico, Zambia, and Cambodia (Amerson, 2010; Krishnan, Richards, & Simpson, 2016; Long, 2016). Students from the United States who participated in international community engagement activities that address chronic disease among the world's most vulnerable populations return to practice in their own communities with improved learning outcomes that could not otherwise be acquired in the classroom alone (Amerson, 2012).

Common among studies on international community engagement were the concepts of reflection and reciprocity, and the use of reflective journaling (Amerson, 2010; Main, Garrett-Wright, & Kerby, 2013; Pechak & Thompson 2011; Tippet, 2016). Researchers have explored student outcomes impacted by international community engagement activities and found improvements in transcultural self-efficacy, cultural competence, and/or critical reflection (Amerson, 2010; Krishnan et al., 2016; Long, 2016). Amerson (2010) compared the cultural competency between groups of baccalaureate nursing students who participated in service-learning projects, locally and internationally (Guatemala). The students wrote reflective notes, assessed the community, and worked with community leaders to develop and implement health education programs (Amerson, 2010). Results indicated that the international group demonstrated higher levels of cultural competency on all domains of cognitive, practical, and affective (Amerson, 2010).

Cultural competency also improved among undergraduate and graduate students from an audiology program participating in a community engagement program to Zambia (Krishnan et al., 2016). Students worked with schools for the deaf and an intervention clinic in Zambia over a two-week period, and participated in daily debriefing and reflection on the experience (Krishnan et al., 2016). The Public Affairs Scale with subsets of community engagement, cultural competency, and ethical leadership was administered before and after the community engagement activity. The researchers concluded that there was significant

change in community engagement and cultural competency as a result of the community engagement project (Krishnan et al., 2016). Themes emerging from a qualitative analysis of the students' journal writings were cultural awareness, benefits of hands-on learning, and emotional experiences (Krishnan et al., 2016).

Main and his colleagues (2013) analyzed journals of nursing students who participated in an eight-day program to Belize. Emergent themes included expectations and emotions, reciprocal relationship with the community, acquiring knowledge for future practice, and personal growth (Main et al., 2013). In yet another study, self-reflection journals of 16 nursing students on a two-week community engagement experience in Belize identified themes of culture shock, increased self-awareness, foreign language competency, and a plethora of emotions (Long, 2016). The researcher also used the Cultural Efficacy Self scale to assess change in knowledge and confidence working with the Hispanic population and found significant improvements as a result of the international community engagement experience.

The literature is lacking on international community engagement wherein foreign community outcomes have been explicitly measured. In a descriptive exploratory study, faculty who developed and implemented international service-learning programs were interviewed. Researchers found that faculty were committed to international service-learning because of the positive impact on students and the community but that there was "a tendency to focus on students to a greater degree than the community" (Pechak & Thompson, 2011, p. 233).

This pilot study may be among the first to measure both student and community outcomes to validate the nature of reciprocity that is a defining characteristic of community engagement.

Theoretical Framework and Reflection Questionnaire

This study abroad program as well as the pilot study were based on Mezirow's (1997) transformative learning theory of adult learning, which was developed in 1978 as a result of research conducted with women in a community college re-entry program. Transformative learning occurs when students, who are given the opportunity to challenge firmly held beliefs, emerge from the learning experiences with new perspectives that are more inclusive, less biased, emancipatory, and more civically engaged (Mezirow, 1997).

Critical reflection, identified as the key concept to facilitate transformative learning, was operationalized and measured using the Reflection Questionnaire (Kember, Leung, Jones, Loke, McKay, Sinclair, Tse, Webb, F. Wong, M. Wong, & Yeung, 2000). The tool consists of a 16-item Likert scale that can be completed in 10 minutes with four items each measuring habitual action, understanding, reflection, and critical reflection. All four are types of learning, but only critical reflection leads to transformative learning (Mezirow, 1997). Scores ranged from one to five with one being the lowest and five the highest. The Reflection Questionnaire is moderately reliable with a Cronbach's alpha score of 0.671 and validity is based on its theoretical underpinning (Kember et al., 2000). Walters et al. (2017) applied a modified version of the questionnaire to a sample of 20 students from various disciplines who participated in short-term study abroad programs to Europe and the Caribbean. Nursing students participating in a two-week service-learning program to Haiti experienced the highest degree of critical reflection and transformative learning compared to students from other disciplines with no community engagement or critical reflection activities (Walters et al., 2017). Study abroad programs across disciplines have the potential to facilitate transformative learning when community engagement and critical reflection occur (Walters et al., 2017).

Program Description and the Partnerships

In 2013, nursing faculty from Clayton State University reached out to Hospital Civil of Guadalajara and the University of Guadalajara to establish a memorandum of understanding and a reciprocal academic relationship. The University of Guadalajara played an integral part in organizing the homestays, language class, and transportation for the program. Nurses at Hospital Civil of Guadalajara received the nursing students with warmth and enthusiasm regardless of language barrier. The first group of students from the United States successfully completed the two-week total immersion program in Spanish language, culture, and the healthcare system in 2014. In addition, faculty and staff from these organizations have participated in conferences in Mexico and in the United States as a result of the collaboration.

The relationship with the community partner METAS began when nursing faculty worked with

the state federation for the blind to solicit Braille machines and canes to donate to the school for blind children in Guadalajara. Several leaders from various state federations of the blind came together in 2016 to create METAS with the goal to further collaborate to mentor and train children who are blind throughout the world, beginning with the school for the blind in Guadalajara (Metas International, 2017). Members of the newly formed METAS organized their activities to include the assistance of the nursing students who participated in the May 2016 program.

In spring 2016, nursing faculty who directed the program completed the PACE workshop to better facilitate community engagement through service and reflection. The workshop consisted of four sessions covering topics such as designing for community engagement, designing and assessing service-learning, defining service-learning, and preparing projects (Clayton State University, 2019b).

The 2016 program associated with this study included the following components: 15 hours of basic Spanish language classes for medical professionals taught by faculty from the University of Guadalajara; 25 hours of hospital clinicals at Hospital Civil de Guadalajara; homestays with Mexican families; hosting a health fair at Proulex; and assisting METAS at a school for the blind in Guadalajara (see Table 1). The following assignments were required: guided reflection journaling and a paper on how the selected health promotion topic addressed the social determinants of health. Students worked in pairs on the same health topic and collected hygiene products to distribute during the health fair. Two pre-trip orientation meetings and one post-trip reunion/debriefing session were held. In addition, continued discourse and daily post conferences occurred while the group was in Mexico. Six weeks after returning to the United States, students were sent the Reflection Questionnaire (optional) to their school email through Qualtrics, an electronic survey program.

Methodology

This is a mixed method pilot study using a convenient sample of students and residents who participated in the international community engagement course in May 2016, with the program director as lead investigator. Approval from the Internal Review Board at Clayton State University was secured in March 2016. The University of Guadalajara Proulex department gave permission

to collect data during the health fair. During the first pre-trip meeting, the primary researcher provided written information about the study and collected signed informed consent forms from the 10 student participants. Students were aware that no additional work would be assigned, they could withdraw at any time from the study, and that participation in the study would not affect the grade earned in the course. At the health fair in Guadalajara, resident participants consented by signing the disclosure statement written in basic Spanish on the researcher-developed health promotion knowledge survey.

The two instruments used in this study were a modified version of the Kember's Reflection Questionnaire (see Table 2) and a researcher-developed health promotion knowledge survey (see Table 3). Kember's Reflection Questionnaire was delivered via Qualtrics survey system to the students within six weeks after returning to the United States. The students and program director worked together to develop the health promotion knowledge survey to be used at the health fair as a pretest/posttest instrument which consisted of seven questions, one from each health promotion topic presented. Resident participants completed the pretest at the registration table, then passed through each student participant's presentation before completing the posttest.

Data without identifiers (names, usernames, and email addresses) were extracted at the end of the course from Desire to Learn (CSU's online course management platform) and Qualtrics survey system. Descriptive analysis was conducted on Reflection Questionnaire responses, and the journal narratives were coded and analyzed using the qualitative analysis software Dedoose. The coding process was systematically developed from the common themes, saturated themes, and distinct perspectives discovered in the student narratives. The transformative theory concepts were also considered in the coding process. Overarching categories that narratives were organized into were disorienting dilemma (feelings of discomfort or distress), transformation (change in perspective), cultural, nursing, and language. Data collected from resident participants were evaluated using Statistical Package for Social Sciences software to determine significance of resident participants' change in knowledge on health promotion topics. The primary researcher kept all data on a password-protected computer and in a locked university office.

Table 1. The 2016 Study Abroad Program Itinerary

TBD		Pre-trip class: Basic Spanish terminology, distribute syllabus, planning and organization, introduction to Guadalajara. Discuss safety issues and conclude pre-trip planning.
May 7	Saturday	Arrive in Guadalajara at 9 p.m., meet Mexican families at U. of Guadalajara's Colegio de Español y Cultura Mexicana (CECM)
May 8	Sunday	Tour of Historic Center and Tlaquepaque, 9 a.m.–afternoon
May 9	Monday	MORNING Basic Spanish for Health Care Professional course at CECM, 9 a.m.–noon AFTERNOON Salsa class, 3–5 p.m.
May 10	Tuesday	MORNING Basic Spanish for Health Care Professional course at CECM, 9 a.m.–noon AFTERNOON Salsa class, 3–5 p.m.
May 11	Wednesday	MORNING Basic Spanish for Health Care Professional course at CECM, 9 a.m.–noon AFTERNOON Health fair at Proulex, 5–9 p.m.
May 12	Thursday	MORNING Basic Spanish for Health Care Professional course at CECM, 9 a.m.–noon AFTERNOON Hospital civil orientation, 3 p.m. (tentative)
May 13	Friday	MORNING Basic Spanish for Health Care Professional course at CECM, 9 a.m.–noon AFTERNOON Leave for excursion in Guanajuato, stop at Cristo Rey Monument
May 14	Saturday	Guanajuato weekend excursion to include El Pipila and Teatro Juarez
May 15	Sunday	Return to Guadalajara in afternoon, stop at market in Leon
May 16	Monday	MORNING Hospital Clinical, 7 a.m.–noon AFTERNOON School for the Blind Children of Guadalajara orientation (Hotel Del Marques)
May 17	Tuesday	MORNING Hospital Clinical, 7 a.m.–noon AFTERNOON School for the Blind Children of Guadalajara, 2–5 p.m.
May 18	Wednesday	MORNING Hospital Clinical, 7 a.m.–noon AFTERNOON Salsa class, 3–5 p.m.
May 19	Thursday	MORNING Hospital Clinical, 7 a.m.–noon AFTERNOON School for the Blind Children of Guadalajara, 2–5 p.m.
May 20	Friday	MORNING Hospital Civil, 7 a.m.–noon AFTERNOON Final exams, presentations and lunch with Mexican families and staff of CECM, 2–3 p.m.
May 21	Saturday	RETURN TO USA
TBD		Post-trip discussions, presentations, and assessment of learning

Findings

Student Participants' Results

Of the 10 students who participated in the program, seven completed the Qualtrics survey with the Reflection Questionnaire. Student participant demography showed 85 percent females, 57 percent between the ages 18 to 30 years, and 57 percent self-identified as Black, Asian, Hispanic, or other. This demography is a reflection of the student population at the university in the United States, which is historically minority

serving and located in a county with majority minority representation. All student participants were from the undergraduate nursing program and spoke English as their primary language. One participant was already a practicing nurse who was in the online baccalaureate nursing program.

From the Reflection Questionnaire, student participants scored moderately high on the subscales of Understanding, Reflection, and Critical Reflection (see Table 2). Most students somewhat agreed to definitely agreed to utilizing

Table 2. Reflection Questionnaire Scores

Subscale (Mean Score)	<i>Please fill in the appropriate circle to indicate your level of agreement with the statements about your actions and thinking during the study abroad experience.</i>	Mean	SD	Range
Habitual Action (3.14)	During this study abroad program, we did things so many times that I started doing them without thinking about it.	3.43	0.49	3-4
	During the study abroad experience, when I am working on some activities, I can do them without thinking about what I am doing.	4.00	0.93	2-5
	With the handouts received on the study abroad program, I did not have to think too much.	2.43	1.05	1-4
	If I follow what the instructor says, I do not have to think too much in the study abroad course.	2.71	1.03	1-4
Understanding (4.50)	In order to pass this study abroad course, you need to understand the content.	4.43	0.49	4-5
	The study abroad course required us to understand concepts taught by the lecturer.	4.86	0.35	4-5
	During the study abroad course, I need to understand the material taught by the teacher in order to perform practical tasks.	4.57	0.49	4-5
	In this study abroad course, you have to continually think about the material you are being taught.	4.14	0.64	3-5
Reflection (4.25)	During the study abroad course, I sometimes question the way others do something and try to think of a better way.	4.29	0.45	4-5
	During the study abroad program, I had to think over what I have been doing and consider alternative ways of doing it.	4.57	0.49	4-5
	I often reflect on my actions to see whether I could have improved on what I did during the study abroad program.	3.71	1.03	2-5
	During this study abroad course, I often re-appraise my experience so I can learn from it and improve for my next performance.	4.43	0.73	3-5
Critical Reflection (4.18)	The study abroad experience has changed some of my firmly held ideas.	4.29	1.03	2-5
	As a result of this study abroad experience, I have changed the way I look at myself.	4.71	0.45	4-5
	As a result of this study abroad experience, I have changed my normal way of doing things.	4.00	0.76	3-5
	During this study abroad course, I discovered faults in what I had previously believed to be right.	3.71	1.03	2-5

cognitive skills of Understanding, Reflection, and Critical Reflection as a result of the international community engagement experience. The score on the subscale of Critical Reflection was a 4.18 out of a maximum of 5.00 and this showed high likelihood of the student participants experiencing transformative learning as a result of the program.

Students were required to write reflection narratives before, during, and after the program to increase self-awareness and be aware of the perspectives of others. They were asked to

summarize and only submit pre and post journal narratives. Guiding questions for the journal responses were:

1. Describe your most challenging or difficult experience today. Why do you think it was challenging? What did you learn from the experience?
2. Describe your most positive or best experience today. Why do you think it was positive? What did you learn from the experience?

3. Describe aspects of your experience today that taught you something about yourself.
4. What did you learn about the Mexican culture, people, and process of healthcare delivery today?
5. Based on your reading of WHO Social Determinants of Health article, how did the reading relate to your experiences in Mexico?
6. As a result of your experiences in this program, explain what would you do differently in providing care or interacting with others from a different culture.
7. How did your experiences today address community health nursing, nursing leadership and nursing education or the nurse educator role?

had never traveled outside the United States stated, “I also [felt] overwhelmed due to it will be my first time flying,” and another student with small children stated that “out of all the stress that [she went] through about this trip, [she was] most worried about my children.” Yet students were excited to embark on the study abroad and eager for challenges ahead. The students wrote, “I [got] excited when attending pre-trip meetings, trying to take in all of the advice and tips” and “I [was] really excited to have this opportunity to go to Mexico and do all the things that [were] planned for us to do. It [was] something new for me, especially to go for service and not vacation.” The point that the student did not feel that the trip would be similar to a vacation was most appropriate and validated the adequacy of the pre-trip preparation.

In the pre-trip reflection narratives, participants indicated that they were nervous and apprehensive about the language and providing healthcare in a foreign country. A student who

Post-trip narratives were organized into overarching categories of disorienting dilemma (feelings of discomfort or distress), transformation

Table 3. Health Promotion Knowledge Survey Questions

Items on Survey	Questions Spanish/English
Demographic information	Edad/Age ¿Masculino o femenino?/Male or female?
Q1 Nutrition	¿Qué porcentaje de frutas y verduras debe tener su plato?/What percentage of fruits and vegetables should your plate be?
Q2 Hand hygiene	¿Por cuántos segundos como mínimo debe lavarse las manos?/For how many seconds should you wash your hands?
Q3 Oral care	¿Con qué frecuencia y duración debe cepillarse los dientes para mantener su salud bucal?/How often and how long should you brush your teeth?
Q4 Diabetes	¿Cuáles son los síntomas de azúcar alta en la sangre?/What are some symptoms of high blood sugar?
Q5 Self-breast exam	¿Con que frecuencia deben las mujeres hacerse una autoexploración de las mamas?/How often should a woman do a self-breast exam?
Q6 Hypertension	¿Qué se puede hacer para prevenir la presión arterial alta (hipertensión)?/What can be done to prevent high blood pressure?
Q7 Eye care	Mencione algo que puede hacer para proteger sus ojos./Identify one thing that can be done to protect the eyes.

(change in perspective), cultural, nursing, and language. All narratives described moments of disorientation regarding various aspects of the experience. Nine of the 10 post-journals described discomfort with their language competency. Seven participants stated that changes in their perspectives occurred as a result of the program, six referred to their nursing skills, and nine narratives reflected on the culture. So, the three consistent themes or areas in which transformative learning most likely occurred were Spanish language competency, nursing skill competency to function in foreign environment, and cultural perspective.

Language acquisition was the most frequently identified challenge, especially since students were of low Spanish language competency. The disorientation with the language was perhaps enhanced by being totally immersed through home stays with families that did not speak English and working in the hospital without interpreters. However, at the end of the two-week program, several students showed profound change in Spanish language competency and perspective of non-English speakers in America. For example:

... Before the study abroad trip, I would think negatively of a person in the USA who did not speak English. I would think that they spoke a little English and just did not want to, or, that they should have learned to speak English since they were in an English speaking country. Now that the roles were reversed, I felt bad for my previous assumptions. I could empathize with the frustration and challenges that non-English speaking people faced in the USA.

The communication barrier between the patients, and also the [Mexican] nurses and nursing students and I were completely visible . . . I thought it was challenging because it is a situation that I am not in too often. I learned how difficult it is for not only Hispanic patients, but those from all other ethnicities who are in the US who don't speak English, but need medical help. I am hoping that I have time to continue to my skills in Spanish so I don't forget what I have learned . . . here.

The international community engagement activities also facilitated change in student's perception of competency in providing nursing

care in a foreign environment; whether at a health fair, hospital, or working with a special needs population such as the blind. The week-long experience at the hospital, working alongside Mexican nurses and nursing students, gave student participants the opportunity to see the nursing profession and healthcare delivery from the Mexican perspective. One participant who was already a registered nurse clearly described this transformation — “My days with [Rosa] gave me a different perspective on my own nursing practice” and “I believe that I am forever changed in a positive way from this experience.” Several students became aware of personal biases against the blind population while working with METAS at the school for blind children. Before the study abroad program, students felt “subliminally prejudiced against blind people” and “bad for the blind” but emerged with new perspective that “blind people can do anything a sighted person can do” and to “ask a blind person” their preference or if they need assistance.

Student change in perspective of Mexican culture and daily life was evident in several narratives. Students were surprised at the close relationships of Mexican family members and public display of respect and affection as stated in these narratives, “I learned that the Mexican culture, people, and healthcare delivery involves family and showing affection” and “one doctor hug and kiss each nurse on the cheek.” One student compared the patient-family dynamic in the United States with that of Mexico during hospitalization. The student noted that “Mexican family units appear to be very strong in the hospital setting [and] witnessed men caring for their mothers and wives. Children and siblings were at the bedsides of family members helping them to eat and ambulate.” Students also wrote of the cultural importance of food and music; “I have a greater appreciation for the food” and “dancing is a significant part of the culture in Mexico.” The students' experience of the Mexican culture from a total immersion perspective provided the opportunity to better understand various aspects of the culture and people.

Resident Participants' Results

Fifty-eight residents completed the pretest portion of the health promotion knowledge survey while only 23 completed the posttest. The low rate of completion of the posttest may be due to a mild earthquake that occurred during the health fair, which caused authorities to suspend all activities

in the building. The resident participants were Mexican students and instructors at Poulex (a language center of the University of Guadalajara) who were studying or teaching English. Half of the resident participants were males and ages ranged from 15 to 59 years with a mean age of 23 years. The questions on the health promotion knowledge survey assessed knowledge on nutrition, hand hygiene, oral care, diabetes, self-breast exam, hypertension, and eye care respectively (see Table 3). The results of the paired sample t-test showed increased knowledge on all questions except the question on diabetes [Mean PretestQ4 = 0.6957; PosttestQ4 = 0.5625] (see Table 4). Topics with statistically significant increase in knowledge were nutrition, hand hygiene, self-breast exam, and eye care (see Table 5).

Limitations of this study include convenient sampling, small sample size, and lack of power analysis, control of variables, and systematic analysis of the qualitative data. Larger sample sizes of student and resident participants guided by power analysis, from multiple universities, would increase the generalizability of the results to similar populations engaging in international community engagement. Students were not assessed prior to the program for competency in serving Latin American populations or having participated in other community engagement projects, which could be confounding variables affecting Critical Reflection scores. Resident participants were also not assessed for English language proficiency prior to the health fair. Therefore, it would be difficult to associate knowledge change at the health fair on Spanish language competency of student participants. In addition, assessment of knowledge change over time would provide a stronger basis for the impact of the teaching provided by the students.

Discussion and Implication

Critical Reflection and Transformative Learning Experienced by Students

“International service-learning experiences provide opportunities for nursing students to enhance personal and professional development related to global issues, social justice, vulnerable populations, cultural competency, engaged citizenship” and [transformative learning] (Tippen, 2016, p. 94). The degree of critical reflection and transformative learning experienced by student participants was indicated by the moderately high mean score on the critical reflection subscale of the Reflection Questionnaire. According to Kember et al. (2000), the higher the score on critical reflection

subscale, the more likely that students experienced transformative learning. Study abroad programs that are designed to promote service and reflection can be the catalyst by which college students develop skills and attitudes needed to become global citizens.

Themes Emerging for Students' Journals Indicative of Transformative Learning

The themes identified from the analysis of the students' journal summaries were language competency, nursing skill competency to function in a foreign environment, and change in cultural perspective. These findings were congruent with themes from journal narratives of students from the literature who participated in international community engagement with a reflection component (Amerson, 2012; Curtin, Martins, & Schwartz-Barcott, 2014; Main et al., 2013). Students repeatedly wrote of the “life changing” experience of the international community engagement experience. Their description of challenges (disorienting dilemma) ranged from fears with speaking Spanish, traveling on a plane, and caring for patients in the hospital. Their narratives were rich with examples of overcoming these challenges by developing new ways of thinking through introspection on the experiences, and with Mexican nurses and residents, peers, and course professors. One powerful transformation in perspective can be noted in the way several students perceived persons living in the United States who did not speak English proficiently as a result of being totally immersed in a foreign language. These themes from the journal narratives with such rich narratives support the high score on the Critical Reflection and the probability that students experienced transformative learning.

Change in Health Promotion Knowledge of Residents

To determine the transformation in health promotion knowledge of resident participants, scores from the health promotion knowledge survey indicated an increase in knowledge on six of the seven topics. A statistically significant increase was noted on questions covering nutrition, hand hygiene, self-breast exam, and eye care. These results support the positive impact that students with no or low language proficiency can have on providing preventative health information to a population speaking a different language. Curtin et al. (2014) noted that nursing students participating in service-learning study abroad to the Dominican

Table 4. Paired Samples Showing t-Test Means on Health Promotion Knowledge Survey

	Mean	N	Standard Deviation	Standard Error Mean
Pair 1 Pretest Q1	0.6522	23	0.48698	0.10154
Posttest Q1	0.8696	23	0.34435	0.07180
Pair 2 Pretest Q2	0.0435	23	0.20851	0.04348
Posttest Q2	0.9130	23	0.28810	0.06007
Pair 3 Pretest Q3	0.7826	23	0.42174	0.08794
Posttest Q3	0.9130	23	0.28810	0.06007
Pair 4 Pretest Q4	0.6957	23	0.47047	0.09810
Posttest Q4	0.5652	23	0.50687	0.10569
Pair 5 Pretest Q5	0.5217	23	0.51075	0.10650
Posttest Q5	0.7826	23	0.42174	0.08794
Pair 6 Pretest Q6	0.6957	23	0.47047	0.09810
Posttest Q6	0.7826	23	0.42174	0.08794
Pair 7 Pretest Q7	0.3043	23	0.47047	0.09810
Posttest Q7	0.5652	23	0.50687	0.10569

Table 5. Paired Samples t-Test Differences on Health Promotion Knowledge Survey

	Mean	SD	Error Mean	t	Sig. (2 tailed)
Pair 1 PretestQ1 – Posttest Q1	-0.21739	0.42174	0.08794	-2.472	*0.022
Pair 2 PretestQ2 – Posttest Q2	-0.86957	0.34435	0.07180	-12.111	*0.000
Pair 3 PretestQ3 – Posttest Q3	-0.13043	0.34435	0.07180	-1.817	0.083
Pair 4 PretestQ4 – Posttest Q4	0.13043	0.45770	0.09544	1.367	0.186
Pair 5 PretestQ5 – Posttest Q5	-0.26087	0.54082	0.11277	-2.313	*0.030
Pair 6 PretestQ6 – Posttest Q6	-0.08696	0.28810	0.06007	-1.447	0.162
Pair 7 PretestQ7 – Posttest Q7	-0.26087	0.54082	0.11277	-2.313	*0.030

Republic improved in confidence and skill in communicating with residents, even with minimal or no ability to speak their language. Though this was a small group of nursing students, this service-learning course gave them the opportunity to have a positive impact on global chronic disease burden in this small community in Guadalajara, Mexico through preventative health education.

The results of this pilot mixed-method study support the use of international community engagement programs to meet both the needs of the student and community. Critical reflection, as a key outcome to achieving perspective transformation among students, can be facilitated through reflective journal writing and service opportunities in the host country. With no consensus on what student outcome to measure on community engagement programs, critical reflection and transformative learning emerge as overarching outcomes encompassing personal,

professional, and cultural aspects. Educators can utilize the Reflection Questionnaire to capture this outcome among student participants. Reciprocity, an important characteristic of community engagement, should be validated through explicit measures of resident participant. There are ethical considerations when the focus of community engagement projects is solely on student outcomes (Pechak & Thompson, 2011). Such ethical concerns can be addressed by working in collaboration with community stakeholders to identify the needs of the community and by evaluating the impact on the residents after the community engagement project.

Conclusion

As higher education advances in the 21st century, international community engagement must be a high priority because of the tremendous potential for critical reflection and

transformative learning to take place. Through international community engagement, students can be profoundly impacted personally and professionally, and better prepared to meet the needs of the global community. Reflection and reciprocity are vital components to effective community engagement programs. Organizers of community engagement programs are challenged to validate reciprocity by measuring community impact as well as student learning. Researchers in this study successfully measured both. Students participating in the service-learning program to Guadalajara, Mexico experienced moderately high levels of transformative learning and were likely to have engaged in transformative learning. Student participants described change in Spanish language and nursing skills competency, and cultural perspective. Resident participants experienced significant change in knowledge on four of the seven health promotion topics in addition to receiving hygiene products. Research is needed to capture the depth of the impact on the community where service-learning takes place by assessing resident outcomes at various points in time. The long-term impact on the students' careers and continued participation in community engagement should also be explored in future studies.

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