DEVELOPING CONTENT FOR AN ONLINE VIRTUAL INTERACTIVE SIMULATION CASE FOR CULTURAL COMPETENCY OF NURSING STUDENTS IN CARING FOR PUERTO RICANS IN NEW YORK CITY: A COMMUNITY BASED PARTICIPATORY RESEARCH APPROACH

by

Lilly Mathew

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As members of the Dissertation Committee, we certify that we have read the dissertation prepared by Lilly Mathew entitled “Developing Content for an Online Virtual Interactive Simulation Case for Cultural Competency of Nursing Students in Caring for Puerto Ricans in New York City: A Community Based Participatory Research Approach” and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

Date: November 16, 2015
Barbara B. Brewer, PhD, RN, MALS, MBA, FAAN

Date: November 16, 2015
Janice D. Crist, PhD, RN, FNGNA, FAAN

Date: November 16, 2015
Robin J. Poedel, PhD, RN, FNP-BC

Final approval and acceptance of this dissertation is contingent upon the candidate’s submission of the final copies of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

Date: November 16, 2015
Dissertation Director: Barbara B. Brewer, PhD, RN, MALS, MBA, FAAN
STATEMENT BY AUTHOR

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SIGNED: ___________ Lilly Mathew________________________
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DEDICATION

I would like to dedicate my dissertation to all the “vulnerable populations” that have health disparities, which are associated with social, cultural, economic, and environmental factors, based upon race, ethnicity, religion, socioeconomic status, gender, age, mental health, cognitive/sensory/physical disability, sexual orientation, gender identity, geographic location, and are possibly linked to discrimination or exclusion.
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ABSTRACT

With growing cultural diversity in the United States (U.S.), health disparities continue to exist among many ethnic minority populations impacting the U.S. economy. Health disparities are health differences that are noted in a particular cultural group in respect to higher rates of diseases and deaths in comparison to others. These cultural groups have common attributes and can be based on race, ethnicity, disability, sexual orientation, income, residential location and many others. One such example is individuals of Puerto Rican heritage, the second largest Hispanic group living in the U.S. mainland. Puerto Ricans are identified to have multiple health disparities in comparison to other Hispanic and non-Hispanic population groups living in the U.S. Among other factors, common cultural health care beliefs and practices of individuals impact health outcomes. Healthcare professionals like nurses are expected to provide culturally competent care to vulnerable populations with known health disparities. Culturally competent care refers to delivering care congruent with patients’ cultural beliefs and practices. Therefore, it is important to educate health professionals regarding caring for vulnerable populations. The purpose of this community-based participatory research (CBPR) study was to develop content for an educational tool, an online virtual interactive simulation (OVIS) case for developing cultural competency of nursing students in caring for the Puerto Rican population of New York City (NYC). The content development for OVIS was guided by the framework for Cultural Competency Simulation Experiences (CCSE), which was developed as a part of this dissertation. The CCSE framework guided the content development of OVIS using a CBPR approach. A community advisory board was developed which consisted of cultural, clinical and educational experts, residing in New York and Puerto Rico.
CHAPTER 1: THE RESEARCH PROBLEM

With the changing demographics and increasing cultural and ethnic diversity in the United States (U.S.) population, it is important to understand that cultural background may have a considerable impact on both patients’ responses to health care services and health professionals’ practice (Spector, 2004). Cultural differences can cause impairment in patient-provider communications. These communications are directly linked to patient satisfaction, adherence, and health outcomes (Betancourt et al., 2003). A recent study exploring factors that influence poor diabetes self-management reports that cultural and language-related capabilities influence patients’ health beliefs, attitudes, and health literacy, as well as the clinician's attitude, beliefs and knowledge (Nam, Chesla, Stotts, Kroon, & Janson, 2011). Cross-cultural barriers between patient and health care personnel add many more challenges to patients’ experiences within the complex health care system of the U.S.

In the face of this increasing diversity, it is important to note that health disparities continue to exist in specific minority populations. Healthy People 2020 describes a broader definition of health disparity:

“a particular type of health difference that is closely linked with social, economic, environmental disadvantage affecting groups of people who have systematically experienced greater obstacles to health based on their racial and ethnic group, religion, socioeconomic status, gender, age, mental health, cognitive, sensory, physical disability, sexual orientation, gender identity, geographic location or other characteristics historically linked to discrimination or exclusion” (Healthy People 2020, p.1).
The economic burden of health disparities in the U.S. was estimated to be 1.24 trillion dollars between 2003 and 2006, and eliminating health disparities in minorities would reduce direct medical care expenditures by 229.4 billion dollars (LaVeist, Gaskin, & Richard, 2009). A major challenge faced in public health is increasing the quality of life by eliminating health disparities. Health disparities among U.S. African-American and Hispanic men cost more than $450 billion over four years (John Hopkins Bloomberg School of Public Health, 2014). Health disparities in the U.S. resulted in $59.9 billion in increased health care costs (The National Urban League, 2012).

To eliminate health disparities, it is important to understand underlying factors that contribute to these disparities and address them. Some of the underlying factors linked to health disparities include the following: low socioeconomic status, low income, low education, and lack of healthcare access (Adler & Newman, 2002). The existence of health disparities also reflects gaps in the quality of care provided (Kilbourne, Switzer, Hyman, Crowley-Matoka, & Fine, 2006). Racial and ethnic disparities in health care persist, and their existence is a clear sign of inequality in care. There are several evidence-based approaches to address disparities; among them is an initiative to improve the cultural competence of health care providers (Betancourt, Corbett, & Bondaryk, 2014). The Institute of Medicine (IOM) identifies that health disparities link to cultural barriers, bias, prejudices, and stereotypical beliefs of health care providers towards ethnic minority populations (IOM, 2002). If we wish to win the fight against health disparities, it is important that educators in the health professions address these attitudes through cultural competency education.
Cultural competency is considered an effective strategy for reducing racial and ethnic disparities and improving health care quality (Betancourt, Green, Emillo Carrillo, & Park, 2005). Cultural competency is defined as “having the knowledge, abilities, and skills to deliver care congruent with the client’s cultural beliefs and practices” (Purnell & Paulanka, 2008, p. 6). Ethnic minority populations with health disparities in the U.S. are vulnerable as they are at a higher risk of poor physical, mental, emotional and social health and have much higher rates of morbidity and mortality (Shi & Stevens, 2010). It is evident in the literature that cultural competence education of health professionals can improve patient outcomes. For example, in a study conducted to reduce asthma disparities among the Latino population, cultural competence training of health care provider groups improved communication skills (Canino, McQuaid, & Rand, 2009). This type of education has the potential to decrease cultural barriers, bias, prejudices, and stereotypical beliefs of health care providers toward vulnerable populations with known health disparities, thereby making significant contributions toward developing health equality in the nation.

Currently numbering over three million throughout the nation, nurses make up the largest segment of the nation’s health care workforce, and can play a fundamental role in the transformation of the U.S. health care system (IOM, 2010). Educating nurses to care for vulnerable populations with known health disparities may prove beneficial to the society as a whole. Health disparities exist among vulnerable populations residing in the geographical areas where future nurses will potentially practice.

Among the Hispanic population, there are specific sub-cultural groups with known health disparities residing in a specific geographical area. Puerto Ricans are the second-largest Hispanic
group, after Mexican-Americans in the U.S. mainland. Among the 53% of Puerto Ricans that are located in the Northeast, 23% are located in New York City (NYC) (Brown & Patten, 2013). This fact makes NYC a significant geographical area for research focusing on Puerto Ricans and their health disparities (Brown & Patten, 2013).

According to the NYC Department of Health and Mental Hygiene (DOHMH), some of the poorest neighborhoods are located in the South Bronx, East and Central Harlem, and North and Central Brooklyn (NYC, 2010). These areas have the highest proportions of black and Hispanic residents, and the death rate in these neighborhoods is 30% higher than in the city’s wealthier neighborhoods (NYC, 2010). Many of the Puerto Rican population live in these neighborhoods (Mccallester & Sebastien, 2015). A recent National Institutes of Health (NIH) study found that among Hispanic/Latino Populations, Puerto Ricans were noted to have higher health disparities than other Hispanics, i.e., Mexican, Central American, Cuban, Dominican and South American populations (National Institutes of Health, 2013). Health issues noted among Puerto Ricans include coronary heart disease (CHD), stroke, asthma, chronic obstructive pulmonary disease (COPD), hearing impairment, hypertension, diabetes, obesity, smoking, depression, and anxiety disorders (National Institutes of Health, 2013). Additionally, in an earlier study, Puerto Ricans were identified to have more emergency room visits than Cubans, Mexicans and non-Hispanic white individuals (Weinick, Jacobs, Stone, Ortega, & Burstin, 2004).

In NYC, cultural diversity is growing at a rapid pace; a diverse nursing workforce is needed to achieve health equity (National Advisor Council on Nursing Education and Practice [NACNEP], 2013). Despite this evident need, the local nursing workforce does not currently reflect NYC’s diversity. This workforce-population discrepancy is particularly evident for its
Hispanic population. In 2006, New York Academy of Medicine (NYAM) and Jonas Center for Nursing Excellence (JCNE) addressed nurse retention and workforce diversity in NYC. The report revealed that approximately only 4% of its nurses are Hispanic, while 27% of the city’s population is Hispanic (New York Academy of Medicine, 2006).

The City University of New York (CUNY) represents the largest percentage of graduating nurses in the city, and yet the average number of Hispanic nursing graduates was only 13% between 2002 and 2011 (CUNY Office of the University Dean for Health & Human Services, 2011). The Future of Nursing report released by the IOM (2011) recommended the nursing profession respond to the underrepresentation of racial and ethnic minority groups in the nursing workforce. This underrepresentation of Hispanic nurses throughout NYC dictates the need for all nurses to become culturally competent in caring for the Hispanic populations for promoting health equity.

One of the major goals of Healthy People 2020 is to achieve health equity, eliminate disparities and improve health; one of the strategies identified is cultural competence education and training of healthcare professionals to care for vulnerable populations (U.S. Department of Health and Human Services, 2014). Therefore, it is essential that nursing education programs focus on educating future nurses to provide quality care to vulnerable populations with known health disparities, particularly when those populations live in a specific geographical area of clinical practice. As Puerto Ricans with known health disparities live in NYC, it is essential that NYC student nurses are prepared adequately to care for them in a culturally competent manner.

The purpose of this study was to design and develop content for an educational tool, an Online Virtual Interactive Simulation (OVIS) for NYC student nurses with the purpose of
educating them specifically to provide culturally competent care to Puerto Ricans. The National Council State Boards of Nursing (NCSBN) defines simulation as “activities that mimic the reality of a clinical environment, and are designed to demonstrate procedures, decision-making and critical-thinking through techniques such as role-playing, and the use of devices such as interactive videos or mannequins” (Caldwell, 2010, p. 2). In this study, a framework for developing Cultural Competency Simulation Experiences (CCSE) was established. The CCSE framework guided the content development of OVIS. A Community Advisory Board (CAB) was established consisting of Puerto Rican cultural, clinical and educational experts to critique the OVIS content using a Community Based Participatory Research (CBPR) approach.

**Statement of the Problem**

It is important to address the challenges that health care practitioners face today in promoting health equity. Rapidly changing demographics predict that the U.S. will be reshaped and re-energized by an increasing racial and ethnic diversity by 2050, which will greatly affect its relations with the rest of the world (Kotkin, 2010). Health disparities have an economic impact on individuals and communities, leading to greater out-of-pocket costs, and lack of access to health care and lower-quality care (Suthers, 2008). The U.S. Bureau of Labor Statistics (2008) predicted that 41.5% of the workforce will be comprised of racial and ethnic minorities by the year 2015. Business communities have begun to recognize the impact of health disparities on the well-being of employees and productivity, and the increased cost of health care has inspired employers to find ways to reduce them. Decreasing health disparities lower both direct and indirect health care costs, which occur due to poor health and illness of employees (Suthers,
Therefore, finding ways to address health disparities among ethnic minority populations could cut health care costs and improve the U.S. economy.

**Health Disparities in Puerto Ricans**

Puerto Ricans are people who self-identify as Hispanics of Puerto Rican origin, being either born in the island of Puerto Rico or able to trace their family ancestry there. They are the second largest population of Hispanic origin living in the U.S., accounting for 9.5% of the U.S. Hispanic population (Brown & Patten, 2013). According to the Census Bureau’s American Community Survey (2011), about 4.9 million Hispanics of Puerto Rican origin reside in the U.S. mainland; this number is greater than the population of 3.7 million Hispanics who reside in Puerto Rico itself. In the U.S. mainland, 53% of Puerto Ricans are concentrated in the northeast, with 23% in New York, and 30% in the south with 18% in Florida (Brown & Patten, 2013). In 2010, the median household income for Puerto Ricans in New York State was 42% lower than other populations; about 35% of Puerto Ricans reported receiving food stamps and 28% of them were living below the poverty level (Center for Puerto Rican Studies, 2012). This fact makes New York a significant geographical area for research focusing on Puerto Ricans and their disparities.

Health disparities are significant among the Puerto Rican populations. An NIH longitudinal study compared health disparities across all Hispanic population groups and reported the following: higher percentages of self-reported coronary heart disease (4.9%), stroke (2.3%), asthma (35.8%), chronic obstructive pulmonary disease (COPD) (16.8%), hearing impairment (21%), hypertension (31.5%), diabetes (19.2%), obesity (46.8%), smoking (33.8%), depression (38%), and anxiety disorder (16.8%) among Puerto Ricans in comparison to other
Hispanic groups (NIH, 2013). Health care access among Puerto Ricans is an issue; 15% of Puerto Ricans lacked health insurance in comparison to 30% of all Hispanics (Brown & Patten, 2013). Health disparities among Puerto Ricans are evident not only among the Hispanic populations but also among the non-Hispanic populations. Mainland Puerto Ricans had the highest rate of stomach, liver and cervical cancers when compared to non-Hispanic whites in the U.S. and Puerto Ricans in the island of Puerto Rico (Ho & Figueroa-Valles, 2009). Puerto Ricans have the highest prevalence of asthma among all population groups in the U.S. (25.1%) as of 2010 (Koinis-Mitchell, Sato, Kopel, & et.al, 2010). Some cultural factors, most notably dietary habits of the Puerto Rican population may be a contributing factor to health disparities. The NIH longitudinal study found that only one in five Puerto Ricans reported eating five fruits and vegetables per day, in comparison to almost half of participants from Cuban and South American backgrounds (NIH, 2013).

According to the latest report released by the Pew Research Center, Puerto Ricans are leaving the island of Puerto Rico in record numbers for the U.S. mainland, a 38% increase from the year 2010 due to decade-long economic recession (Krogstad, 2015). This fact strengthens the need to focus on the Puerto Rican population and health disparities. Puerto Ricans are identified as a large cultural group with health disparities in NYC, therefore future nurses can play an active role in addressing these health disparities. Therefore, it is necessary for nurse educators to prepare nursing students to care for Puerto Ricans by providing effective learning experiences. Similarly, nurses can also be educated to care for other vulnerable population groups with known health disparities who reside in the geographical area of clinical practice.
Cultural Competency Education in Nursing

The nursing profession currently makes up the largest segment of the nation’s health care workforce (IOM, 2010), and can make a significant contribution by decreasing health disparities among vulnerable populations. Literature suggests that culturally competent health care professionals have the potential to decrease health disparities among vulnerable populations. In a recent study, it was noted that culturally competent community health workers improved outcomes by reducing inpatient utilization of services in patients with human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) (Agency for Health Care Research and Quality, 2008). Culturally sensitive interventions like cultural competence training and racial and ethnic concordance, which is a cultural match between the patient and the provider, have shown to cause improvements in self-assessed measures of provider knowledge and patient satisfaction (Fortier & Bishop, 2003). The cultural match is not an effective strategy as the NYC nursing workforce does not represent the Hispanic population, as discussed earlier. However, this study focuses on educating all health professionals in providing culturally competent care to Puerto Ricans regardless of their cultural match with the patients. The use of culturally-focused approaches, such as interpreters in health education programs, community health workers, and translated materials, reported increases in health education program enrollment and completion among minority patients (Fortier & Bishop, 2003). In this study, community members became an integral part and made significant contributions by sharing their cultural values and health care beliefs.

Cultural competency is considered an effective strategy in reducing racial and ethnic disparities and improving health care quality (Betancourt, Green, Emillo Carrillo, & Park, 2005).
It is imperative to incorporate cultural competency education focusing on vulnerable populations with known health disparities into nursing curricula. Eliminating health disparities requires the development of knowledge as well as basic competencies and skills among health care professionals, and must begin in educational settings through the integration of content designed to develop sensitivity and competence (Giger et al., 2007). Health professionals who are culturally competent in caring for vulnerable populations can truly make a difference by reducing health disparities.

In the field of nursing education, the importance of cultural competence among nursing students has been addressed in the past. Nursing students without work experience were found to have lower cultural competency scores than those who had work experience (Carey, 2011). Students who had experiences studying abroad were also found to be more culturally competent (Carey, 2011). It is important for nursing students to have cross-cultural experiences that promote cultural competency. Conversely, a lack of this type of experience in nursing education can jeopardize students’ ability to care for culturally diverse patients. In one published study, the integration of cultural competency in nursing classes was found to be lacking; faculty were missing opportunities to train the students in becoming culturally competent, nursing students had concerns about their ability to integrate cultural competence into their practice (Sumpter & Carthon, 2011). The overcrowded nursing curriculum makes it difficult to incorporate cultural competency education, placing the students at risk of being inadequately prepared to care for patients of diverse cultures (Slade, Thomas-Connor & Tsao, 2008). Nursing students have reported only a 61% confidence rate in their ability to care for culturally diverse patients (Andrews & Boyle, 2012). Cultural competency related content is threaded into health
professional education (Sales, Jonkman, Connor, & Hall, 2013; Virdun, Sherwood, Power, Phillips, & Jackson, 2013), however, the effectiveness of such education on health professionals clinical practice and its impact on patient outcomes is unclear. There is a need to develop, implement and evaluate culturally competent programs that address health disparities that exist among vulnerable populations in the specific geographical area where health professionals are likely to practice in the future (Agency for Healthcare Research and Quality, 2014). This education is proposed to help decrease health disparities among specific population groups that reside in a particular area.

There are some strategies found in the literature related to addressing health disparities in the nursing education curricula. These include, research training in collaboration with the Center for Health Disparities (Deatrick et al., 2009), and the incorporation of minority students in graduate and doctoral programs to decrease health disparities (Goeppingier, Miles, Weaver, Campbell, & Roland, 2009). There is still a need to formalize cultural competency education (Jeffreys & Dogan, 2012). There is a need for nursing education to focus on decreasing health disparities among populations that exist in the community where nursing students will practice through use of effective educational tools for cultural competency, which is currently lacking. With the increasing use of online and distance learning in nursing, it is important to design and develop effective cultural competency online programs, to educate future workforce. Even though the importance of cultural competence education is noted in the nursing curriculum, it is unclear whether it addresses health disparities in specific vulnerable populations of interest like the Puerto Rican population, or whether the approaches taken are effective.
Background of the Problem

Acknowledgment of the existence of health disparities among vulnerable populations gained much attention with the release of the IOM (2002) report on unequal treatment. Some of the factors cited in the report related to health disparities were cultural barriers, bias, prejudices, and stereotypical beliefs held by health care providers toward ethnic minority populations (IOM, 2002). Even though the cultural competency movement began about twenty years ago in the fields of nursing and mental health (Lo & Stacey, 2008), it gained increased attention after the release of the IOM report in 2002.

National Efforts to Decrease Health Disparities

It is of national interest to address health disparities, and many efforts have been undertaken to deal with this issue. In response to the IOM report on unequal treatment (IOM, 2002), the national accrediting bodies such as the Joint Commission, National Committee for Quality Assurance (NCQA) and National Quality Forum (NQF) have published reports that require cultural competency training within hospitals, health care organizations and managed care plans (Like, 2011). The Health Resources and Services Administration (HRSA) strongly advocates for the inclusion of cultural and linguistic competency training in health care systems, and has proposed culturally competent practices and approaches to improve the health of minority populations by reducing health disparities (Khanna, Cheyney, & Engle, 2009). In the Affordable Care Act of 2010, there are special provisions related to cultural competency that include development and evaluation of cultural competency curricula, cultural competency training for health care professionals, and collaborative research on cultural competence (HealthCare.gov, 2010).
In 1997, the National Standards for Culturally and Linguistically Appropriate Services in Health Care (CLAS) was established to assure quality care for diverse populations (Spector, 2004). In 2010, the NIH established the National Institute of Minority Health and Health Disparities to address existing health disparities (Dayer-Berenson, 2014). It is clear that the need for culturally and linguistically competent health care services for diverse populations has gained the attention of health care providers and accrediting bodies (Spector, 2004).

It is important to note the connection that exists between health disparities and cultural groups. The definition of health disparities by Healthy People 2020 includes various cultural groups. Examples of words used to describe cultural group attributes include racial/ethnic group, religion, socioeconomic status, gender, age, mental health, disabilities (cognitive, sensory, and physical), sexual orientation, and geographic location, which are cultural groups. Culture is learned and transmitted values, beliefs, and practices of a particular group of people that guide thinking, decisions and actions in a patterned way (Leininger, 1995). According to the Merriam-Webster Medical Dictionary, culture is defined as an integrated part of human behavior, which includes thought, speech, actions based on human capacity, including customary beliefs, social forms, racial, religious or social groups (Merriam-Webster, 2015). Health disparities are seen among different cultural groups, and they need to be addressed in health professions education. It is important to prepare the future nursing workforce to provide culturally competent care to vulnerable populations with known health disparities. It is evident that continuing efforts are being made on many sides to address health disparities among vulnerable populations. In order for better understanding of terms that are used in this study related to cultural competency refer to Table 1, which consists of key terms used in this study and the explanation of these terms.
### TABLE 1. *Key Cultural Competency Terms.*

<table>
<thead>
<tr>
<th>Terms</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Acculturation</strong></td>
<td>It refers to change of one’s cultural patterns to those of the host society (Spector, 2004).</td>
</tr>
<tr>
<td><strong>2. Culture</strong></td>
<td>Culture is learned and transmitted values, beliefs, and practices of a particular group of people that guide thinking, decisions and actions in a patterned way (Leininger, 1995).</td>
</tr>
<tr>
<td><strong>3. Cultural Awareness</strong></td>
<td>It is self-examination of one’s personal biases, stereotypes, prejudices and assumptions about individuals that are different (Campinha-Bacote, 2007)</td>
</tr>
<tr>
<td><strong>4. Cultural Congruence</strong></td>
<td>Cultural congruence is acts or decisions that fit with individual, group, institutional cultural values and beliefs, to provide meaningful, beneficial health care services and wellbeing (Leininger, 2011).</td>
</tr>
<tr>
<td><strong>5. Cultural Competency</strong></td>
<td>Cultural competency is defined as “having the knowledge, abilities, and skills to deliver care congruent with the client’s cultural beliefs and practices” (Purnell &amp; Paulanka, 2008, p. 6).</td>
</tr>
<tr>
<td><strong>6. Culturally Competent Care</strong></td>
<td>It refers to delivering care congruent with patients’ cultural beliefs and practices.</td>
</tr>
<tr>
<td><strong>7. Cultural Leverage</strong></td>
<td>A focused strategy for improving the health of racial and ethnic communities by using their cultural practices, products, philosophies, or environments as approaches to facilitate behavior change in patients and practitioners (Fisher, Burnet, Huang, Chin, &amp; Cagney, 2007).</td>
</tr>
<tr>
<td><strong>8. Cultural Humility</strong></td>
<td>It is the ability of becoming oriented and open to other persons in relation to aspects of cultural identity (Hook, Davis, Owen, Worthington and Utsey, 2013).</td>
</tr>
<tr>
<td><strong>9. Cultural Knowledge</strong></td>
<td>Cultural knowledge is a sound educational base about culturally diverse groups achieved through seeking and obtaining such knowledge (Campinha-Bacote, 2007).</td>
</tr>
<tr>
<td><strong>10. Cultural Sensitivity</strong></td>
<td>Cultural sensitivity is awareness and utilization of knowledge related to a particular cultural group and the ability to explain and understand situations and responses of individuals belonging to that cultural group (Chang, 2007).</td>
</tr>
<tr>
<td><strong>11. Cultural Skills</strong></td>
<td>Cultural skill is the ability to collect relevant cultural data regarding patient’s problems and accurately performing a culturally sensitive physical assessment (Campinha-Bacote, 2007).</td>
</tr>
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</table>

### Cultural Competence Education Methods

Cultural competence is a strategy to address ethnic and racial disparities, and means of improving health care quality (Betancourt, Green, Emillo Carrillo, & Park, 2005; Khanna, Cheyney, & Engle, 2009) and much effort is placed in training and educating health professionals in the area of cultural competency. There is much written in the literature about the appropriate ways to train and educate health professionals in the area of cultural competency. To develop cultural competence at an individual level, teaching and learning methods may include
lectures, case study, role-play, video materials, and video feedback (Bhul et al., 2007).

Interactive cultural competency workshops designed to improve medical students’ attitudes, beliefs, and cross-cultural communications were also noted to be an effective strategy (Carter et al., 2006). Workshops including cross-cultural clinical encounters and linguistically appropriate services have shown to improve the knowledge and skills of health care providers and administrators (Khanna et al., 2009). Cultural competency training in conjunction with the study of monthly race-stratified performance highlighted racial differences in control of glycosylated hemoglobin (HgA1C), low-density lipoprotein (LDL), and cholesterol levels (Sequist et al., 2010). In the same study, blood pressures were shown to raise awareness of racial disparities in diabetes care among physicians, although they did not improve clinical outcomes among black patients (Sequist et al., 2010). This study provides evidence that cultural competency training or workshops with cross-cultural clinical encounters or experiences with the populations of interest may increase awareness of racial disparities.

Interdisciplinary educational activities like classroom teaching, fieldwork, e-learning, and online discussion forums improved cultural competency scores across health disciplines (Hawaly-Druy & Hill, 2012). Standard patient examinations integrating questions about cross-cultural care showed low scores on “attitude toward cross-cultural care” among surgical residents, indicating the need for cultural competency training in medical school curricula (Chun, 2010). Writing an extended case narrative on culturally related experiences provided evidence of more cultural awareness among experienced physicians (Foreman, Hark, & DeLisser, 2012). Cultural awareness is a key component of cultural competency, where one must be culturally aware of the cultural differences that exist between them and others to be culturally competent.
Cultural awareness is self-examination of one’s personal biases, stereotypes, prejudices and assumptions about individuals that are different (Campinha-Bacote, 2007). Using a virtual community to foster cultural awareness among nursing students was also noted to be an effective strategy (Giddens, North, Carlson-Sabelli, Rogers, & Fogg, 2012).

An online interactive simulation involving an Arab-American Muslim patient improved the knowledge, skills and attitudes about cultural competency among medical students (Smith & Silk, 2011). Low-tech simulations fostering cultural and interdisciplinary awareness in a fundamental nursing course prepared students for their critical care clinical rotations (Ruth-Sahd, Schneider, & Strouse, 2011). With all these various cultural competency training formats used throughout the education of health professionals, it is important to note that the impact of such education on patient outcomes is understudied. Health disparities continue to exist in specific cultural and ethnic groups. Therefore, it is important to place effort on developing the health professions’ program curricula to ensure a workforce that is culturally competent to meet the health care needs of a culturally and ethnically diverse society, and to decrease health disparities.

**Significance of the Study**

**Culturally Competent Workforce**

Health care professionals may have difficulty in caring for culturally diverse patients if they lack the necessary skills and attitudes required to deliver culturally competent care (Campinha-Bacote, 2007). Culturally competent professionals have previously made contributions to improving health outcomes and reducing health disparities. One example is among inner-city HIV/AIDS patients; culturally competent community health workers improved outcomes and reduced inpatient utilization (Agency for Health Care Research and Quality,
Health interventions using cultural leverage, which is the use of interventions using culture to narrow racial disparities in health care, showed tremendous promise in reducing health disparities (Fisher, Burnet, Huang, Chin, & Cagney, 2007). Cultural leverage is also a focused strategy for improving the health of racial and ethnic communities by using their cultural practices, products, philosophies, or environments as approaches to facilitate behavior change in patients and practitioners (Fisher, Burnet, Huang, Chin, & Cagney, 2007). Culturally sensitive interventions such as cultural competence training and racial and ethnic concordance have resulted in improvements in self-assessed measures of provider knowledge and patient satisfaction (Fortier & Bishop, 2003). Health promotion and education programs that utilize interpreters, community health workers, translated materials and other culturally sensitive approaches reported increases in the intake, program completion, and knowledge of participants (Fortier & Bishop, 2003). Hispanic patients reported high satisfaction rates when they received care from nurse practitioners of Hispanic origin with cultural competency training (Castro & Ruiz, 2009). Integrating culture care in HIV treatment resulted in increased adherence to provider instructions, increased trust in providers and improved self-managed care (Gaston, 2013). A culturally competent diabetic self-management educational program improved health outcomes of Mexican Americans, lowering average HbA1C and fasting glucose levels (Brown & Dougherty, 2002). In another study, use of Promotoras to deliver a culturally tailored diabetic self-management program, increased participants’ diabetes self-management activities and diabetes knowledge (McEwen, Pasvogel, Gallegos, & Barrera, 2010). Promotoras are community health workers (CHWs) of a target population; they share social, cultural and economic characteristics of the target population, and they serve as advocates, educators,
translators, and mentors providing culturally appropriate services to the community (Rural Assistance Center, 2015). These studies provide evidence that significant patient benefits result with culturally competent care. Health professionals who are culturally competent in caring for vulnerable populations have the potential of making a difference and reducing health disparities.

**Cultural Competency Education in Health Professions Curricula**

Cultural competency is having the knowledge, abilities, and skills necessary to deliver care congruent with the client’s cultural beliefs and practices (Purnell & Paulanka, 2008, p. 6). Cultural competency, when it occurs early in health profession education, enables health care providers to learn multiple structural forces, like the race, gender, and immigration that shape patients’ cultural orientations (Lo & Stacey, 2008). Cultural competence education for vulnerable populations can prove beneficial in developing cultural sensitivity among health professionals. A culturally competent health professional must develop cultural sensitivity. Cultural sensitivity is awareness and utilization of knowledge related to a particular cultural group and the ability to explain and understand situations and responses of individuals belonging to that cultural group (Chang, 2007). Developing cultural sensitivity requires behavior change to be effective; novice health profession students come from diverse ethnic and cultural backgrounds, and may have stereotypes, biases and ethnocentric values that could inadvertently get carried over at the patient’s bedside. Studies have shown a link between cultural competence and improved health outcomes for racial/ethnic minorities (Betancourt, Green, Emillo Carrillo, & Park, 2005). Examples exist throughout the literature that provides evidence for cultural competence education in other health related professions. Physician assistant students who received didactic studies and clinical experiences in cultural sensitivity throughout their
education showed significant improvement in their cultural knowledge in their final years and through matriculation (Huckabee & Matkin, 2012). Cultural knowledge is an integral part of cultural competency; one must have cultural knowledge to be culturally competent. As a result of changing demographics in the U.S., the pressure is placed on health care professionals to be culturally competent while providing care that is relevant and effective. Since nurses represent the largest group of healthcare professionals in the U.S., student nurses represent a foundational group that will provide change for the climate of future health care.

Different racial and ethnic minority cultural groups have diverse health beliefs and practices and understanding them can be a challenge; there are many sub-cultural groups with individual beliefs and practices as well. Caring for culturally diverse population groups requires health professionals to have the knowledge, skills and attitudes to provide culturally competent care. It is important for health care professionals to have an understanding of common health care beliefs and practices of populations who live within their geographical region with known health disparities. It is important to have culturally competent care as a standard of care to be provided by all health care professionals. It is important for health professionals to learn to assess for health issues in vulnerable populations, to understand the general cultural needs of those populations, and to assess specific individuals and families’ cultural needs to deliver care that is culturally congruent.

**Cultural Competency in Nursing Education**

Quality and Safety Education for Nurses (QSEN) recommends that for each of the IOM competencies, nurses need to develop knowledge, skills, and attitudes (KSA) during pre-licensure nursing education (QSEN, 2013). The IOM competencies for nursing include patient-
centered care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics (Cronenwett et al., 2007).

One important aspect related to cultural competency is patient-centered care, which is “providing care that is respectful and responsive to individual patient preferences, needs, and values that guide all clinical decisions” (IOM 2001, p.3). Undergraduate nurses need to develop knowledge about how diverse cultural, ethnic and social backgrounds function and impact patient, family, and community values. These student nurses need to develop skills in providing patient-centered care with sensitivity and respect for the diversity of the human experience. They need to develop attitudes that willingly support patient-centered care for individuals and groups whose values differ from their own (QSEN, 2013).

The American Association of Colleges of Nursing (AACN) has identified key competencies for baccalaureate nursing programs related to cultural competency. These competencies include applying socio-cultural knowledge in caring using relevant data and best evidence in providing culturally competent care, promoting safety and quality outcomes for diverse populations, advocating for social justice, committing to the health of vulnerable populations, elimination of health disparities, and participating in continuous cultural competence development (AACN, 2008). Therefore, it is important to include cultural competency concepts within the nursing curriculum to meet AACN requirements.

In the Affordable Care Act of 2010, special requirements include the development and evaluation of cultural competency curricula, cultural competency preparation for health care professionals, and collaborative research on cultural competence (HealthCare.gov, 2010).
Healthcare accrediting bodies such as the Joint Commission, National Quality Forum (NQF) and the National Committee for Quality Assurance (NCQA) have made available reports suggesting the need for cultural competency within health care organizations (Like, 2011). The HRSA strongly supports incorporating cultural and linguistic competency training in health care systems and has suggested culturally competent practices and approaches to improve the health of minority populations to reduce existing health disparities (Khanna, Cheyney, & Engle, 2009).

In nursing, concepts from Campinha-Bacote’s practice model in the process of gaining cultural competency have been used to promote cultural competency in undergraduate nursing courses (Campinha-Bacote, 2007). Formalized cultural competence education in nursing education can improve transcultural self-efficacy of nursing students (Jeffreys & Dogan, 2012); therefore, it is crucial to include cultural competence education in the nursing education curriculum. Cultural competence education is a complex and time-consuming process, and it needs to be customized to the needs of the institution (Mancuso, 2011). In nursing education, it can be customized to address culturally competent care of vulnerable populations relevant to the geographical area of clinical practice. Literature suggests that within cultural competence education, students should be taught cultural skills through the use of interactive education methods like standardized patients, role-play and self-reflective journals (Kripalani, Bussey-Jones, Katz, & Genao, 2006). Cultural skill is the ability to collect relevant cultural data regarding patient’s problems and accurately performing a culturally sensitive physical assessment (Campinha-Bacote, 2007).

Cultural competence education can also be conducted in a formal setting with direct faculty observation, feedback and during clinical rotations. There should be administrative
support for the promotion of cultural diversity among students, and dedicated faculty should teach cultural competency. In short, there is a need to make cultural competency a real science (Kripalani et al., 2006). In the education of health professionals, cultural competency must occur early in training through the utilization of case studies (Lo & Stacey, 2008). It will enable the health care providers to learn about the multiple structural forces that may shape patients’ cultural orientations (Lo & Stacey, 2008).

Establishing a transcultural nursing leadership institute in China was one effective strategy where 200 nursing leaders developed and implemented major studies that connected them to the global nursing community by facilitating joint research, publications, and education (Capitulo, 2012). Study abroad programs are a strategy to promote cultural competence among nursing students (Edmonds, 2012). Study abroad programs create an experiential learning environment, and the use of role-modeling, reflective journaling, and group discussions were noted to be effective teaching strategies in these settings (Carpenter & Garcia, 2012). Interprofessional trans-cultural immersion programs provide students opportunities to communicate and collaborate with one another in providing primary care within cultural settings (Morton, 2012).

There is limited research on the effects of cultural competency training on patient outcomes (Lie, Lee-Rey, Gomez, Bereknyei, & Braddock, 2010). Even though many forms and methods of cultural competency training exist in most of health professional studies, it is difficult to suggest the most effective strategies, since there are a minimal number of studies measuring the effectiveness and outcomes of such training on patients.
Use of Simulation in Nursing Education

The NCSBN defines simulation as “activities that mimic the reality of a clinical environment and are designed to demonstrate procedures, decision-making and critical-thinking through techniques such as role-playing and the use of devices such as interactive videos or mannequins” (Caldwell, 2010, p. 2). Simulation is used widely in health care education, including the fields of nursing and medicine. In nursing, simulation is commonly used to teach bedside nursing skills and methods of caring for acutely ill patients. Literature also suggests the use of simulations in teaching non-physical skills like psycho-social, critical thinking, judgment and communication skills in nursing (Bosse et al., 2010; Johnson et al., 2012; Schubert, 2012). For the last decade, the use of simulations in nursing education has been increasing. A recent longitudinal, randomized controlled study published by the NCSBN recommends that simulation can substitute for 50% of traditional clinical experience in all pre-licensure core nursing courses under certain critical conditions. These conditions include the following: simulation to be facilitated by formally trained faculty members in simulation pedagogy, an adequate number of faculty members to support the student learners, the presence of subject matter experts who conduct theory-based debriefing, and equipment/supplies to create a realistic clinical environment (Hayden, Smiley, Alexander, Kardong-Engren, & Jeffries, 2014). In this study, a virtual simulation is considered which does not require meeting these conditions; therefore, it is more feasible to be used in nursing education. In nursing education, simulation is utilized to provide nursing students with near-clinical experiences using human patient simulators, standardized patients, and virtual patients.
**Human Patient Simulators (HPS)**

Human Patient Simulators (HPS) are plastic mannequins that mimic real patients; they have many of the anatomical and physiological features of a human body, and are manufactured using sensors and pumps that are capable of performing real human physiological functions (Mathew, 2011). Educators can plan high-fidelity simulation (HFS) experiences using HPS. HFS refers to the creation of structured student clinical learning experiences with the use of technologically advanced computerized mannequins (Hicks, Coke, & Li, 2009). HPS is costly; a basic simulation lab may cost $100,000, and an advanced lab may cost millions (Hanberg, Brown, Hoadley, Smith, & Courtney, 2007). A simulation lab also requires personnel to operate the simulators and the scenarios from a control room, as well as staff for the lab setup. Since the HPS is a plastic mannequin, it may also be argued that its use in training takes away the clinical reality of interacting with a real human being.

**Standardized Patients**

Standardized patients are human actors that assume the roles of patients in simulations. In one case, simulations were used to teach cross-cultural communication skills to dental students using a patient-instructor (PI) simulation program with an emphasis on cross-cultural patient encounters (Wagner et al., 2007). Students rated that the simulation experience was helpful in learning to notice and respond to patient symptoms, relating classroom concepts to a clinical setting, and improving confidence in their ability to care for a patient in a clinical setting (Johnson et al., 2012). Theatre Forum simulation, where actors stage the simulation experience (Tuxbury et al., 2012), was also found to be effective. In another case, students found geriatric home care simulation a valuable learning experience (Smith & Barry, 2012). When using
standardized patients, there are a few risks involved, such as personal injury with compromised safety. It is important to understand that accidents can occur, and students can make mistakes with the use of live actors or standardized patients in the simulation. One of the strengths of simulations is that they allow students to learn through mistakes, which may be a risk to the standardized human patients. Another weakness of this approach is that standardized patients may manipulate a simulation case unintentionally, which may cause a change in focus or prevent students from meeting the simulation objectives. There is also a cost associated with standardized patients; the pay rate is around $25 per hour, or $100 to $200 per day for three to four hours of simulation (Cegielski, 2011).

**Virtual Patients**

Virtual patients are computer-generated animated patients, or avatars, who can play the role of a real patient in clinical scenarios while the learner plays the role of a health care provider (McGee, n.d.). In the literature, the use of virtual simulations and Second Life (SL) avatars was noted to be effective in educating students (Randon et al., 2011; Kidd et al., 2012). A new virtual patient model for primary care was pilot tested and showed good acceptance by students, and indicated self-directed learning and reflective thinking (George & Zary, 2014). Use of a web-based virtual patient improved examination performance of learners compared to those with paper-based patient cases (Poulton, Conradi, Kavia, Round, & Hilton, 2009). There is evidence that virtual patients are effective, but further research is needed to identify the best possible integration in curricula, its value and cost/benefits ratio in comparison to other active learning methods (Consorti, Mancuso, Nocioni, & Piccola, 2012). Virtual simulations have also been used to improve cultural competency skills. An interactive online simulation involving an Arab-
American Muslim patient improved the knowledge, skills and attitudes about cultural competency among bilingual medical students (Smith & Silk, 2011). With the latest development of real life (RL) virtual patients, which are real human images with interactive functions, there exists the capability to create a real clinical environment, in which the students feels like they are interacting with a real patient on their computer screen. These virtual patients are capable of verbally communicating with students and responding appropriately to student questions.

**Simulations for Cultural Competency**

In recent years, there has been an increase in the use of computers and technology in general education, as well as within cultural education. With the increasing use of technology in higher education, it is logical to consider the use of technology in developing cultural competency in the health professions; however, simulation as a teaching pedagogy is still emerging. The use of simulations in nursing education for cultural competency is a fairly new concept. It is used in teaching bedside nursing skills and caring for acutely ill patients, but its use in the area of cultural competency and cultural sensitivity is minimal; however, simulations have been used to teach non-physical skills. Literature suggests that the majority of the studies on simulation and its use in teaching non-physical skills were done in the U.S., with a few international studies done in Germany (Bosse et al., 2010; Randon et al., 2011), United Kingdom (Buckley et al., 2012), Canada (Sigalet et al., 2012), and China (Chang et al., 2012).

Some simulations focusing on non-physical skills were found to be effective. In one example, students were exposed to caring for poor patients to simulate caring for a poverty stricken population (Noone et al., 2012). In another example, students from different professions participated in simulation experiences to demonstrate interprofessional collaboration (Buckley et
al., 2012; Ellman et al., 2012). Low-tech simulations fostering cultural and interdisciplinary awareness in a fundamental nursing course were shown to prepare students for their critical care clinical rotations (Ruth-Sahd, Schneider, & Strouse, 2011).

Simulations are used as an effective strategy for teaching non-physical skills like cultural sensitivity to promote cultural competency in caring for vulnerable populations. Therefore, the idea of developing simulations focusing on population groups with health disparities like Puerto Ricans for health professionals may be valuable. In this study, it was important to determine the most appropriate type of simulation mode to be used for designing cultural competency simulation experiences. The following section presents support for using virtual modes for cultural competency.

**Support for Virtual Simulations for Cultural Competence**

For health professionals, the experience of engaging with culturally diverse patients can enable them to learn the skill of completing a cultural assessment and collaboratively developing and delivering a plan of care (Campinha-Bacote, 2007). Keeping in mind the challenges that come along with cultural competency education in health profession curricula, there is still a need to develop feasible, interactive cross-cultural patient encounters. Virtual learning environments can be used to create simulations allowing role-playing and collaboration and it can provide unique educational experiences that might be difficult or impossible in the real world to create (Eschenbrenner, Fiona Fui-Hoon, & Keng, 2008).

Cross-cultural experiences can be expensive, especially in the case of study abroad programs. Additionally, many programs can provide just one experience, in contrast to the virtual world, where students can have repeated exposure and experiences. Virtual reality
simulation is a computer-based three-dimensional educational tool that has the potential to simulate real life patient experiences in a safe environment allowing repeated practice sessions, requiring clinical-decision making skills, exposing students to diverse patient conditions, providing immediate feedback and easy accessibility (Jenson & Forsyth, 2012). Many types of virtual simulations are currently used in health professional programs. In one study conducted to evaluate medical students’ knowledge, skills and attitudes regarding culturally competent health care, the use of an interactive online simulation involving an Arab-American Muslim patient showed that bilingual students were more culturally competent than those who spoke only English (Smith & Silk, 2011). Unfortunately, however, the article fails to list the other languages that the students spoke. An integrated online program utilizing simulation to provide culturally diverse learning opportunities for university and distance-learning students enabled addressing clinical situations in a safe, non-threatening environment (Rutledge et al., 2008). A pilot study conducted to evaluate the use of virtual clinical simulation for improving communication skills of Bachelor of Science in Nursing (BSN) students showed a statistically significant change (p<.001) in student performance scores, which doubled from performance one to performance two in an online virtual clinical environment (Foronda, Gattamorta, Snowden, & Bauman, 2013). Virtual simulation second life (SL), an innovative internet-based strategy using avatars, was implemented in accelerated online nursing programs to engage students in active learning (Schmidt & Stewart, 2009). Another pilot study conducted in a postgraduate medical education program using an SL simulation of a diabetic patient showed that the participants’ “correct insulin initiation plan” increased from 60% to 90% and “correct initiation of mealtime insulin”
increased from 40% to 80% post-simulation. All participants agreed that the experience with SL was an effective method for medical education (Wiecha, Hayden, Sternthal, & Merialdi, 2010).

With recent innovations in technology in the area of virtual simulations, it is possible to develop educational programs for health care professionals geared toward cultural competency. Such programs, when incorporated in academic preparation, can prove beneficial in developing cultural competency skills of nursing students (Huckabee & Matkin, 2012; Giddens, North, Carlson-Sabelli, Rogers, & Fogg, 2012). Virtual simulations provide many advantages when used as a platform to develop cross-cultural experiences. They can provide distance learners with easy, continuous online access. Once developed, they require minimal faculty guidance in comparison to teaching using high fidelity lab simulation. Automated logs enable evaluation of students’ performance, and establishment of reliability and validity of the simulation cases is possible with standardized simulation cases making testing in multiple locations possible, both nationally and internationally. In the actualization of OVIS program, automatic logs will be built in to monitor student performance. Virtual simulation programs with their online accessibility features can also help educate distant learning students. In comparison to other types of simulations, such as high-fidelity lab or standardized patient simulations, there is a minimal need for faculty effort and personnel assistance using virtual simulation. Virtual simulation cases, once developed require no additional faculty preparation; at the same time faculty can access, monitor and evaluate students based on their performances. Developing virtual simulations focusing on specific cultural groups with existing health disparities may prove beneficial to nursing and other health professionals. Simulations have the potential to create educational opportunities and sensitize health professionals in caring for culturally diverse populations with
known health disparities who live in the geographical area where the health professionals may practice in the future.

Cultural experiences such as study abroad, medical missions, and service learning are valuable experiences, but are expensive and require a great deal of time and effort, including the risks involved with traveling. Creating an online virtual simulation experience is not only a cost-effective strategy but can also address the need for cultural competency in the health professions. Developing and testing innovative and interactive simulations may prove to be an effective strategy for developing a culturally competent health workforce. Designing highly-interactive virtual simulations for cultural competency based on existing conceptual frameworks and theories related to cultural competency may prove to be a beneficial tool in developing and evaluating cultural competency levels of health care professionals. Such cultural competency simulations can be utilized in all educational programs within the health professions, as well as among health professionals at health care institutions. The greatest benefit of virtual simulation is the online capability, which promotes easy accessibility for students at any time, giving it a great advantage over a physical high-fidelity simulation lab. Table 1 presents comparisons of different modes of simulations.
TABLE 2. *Comparison of Simulation Modes.*

<table>
<thead>
<tr>
<th></th>
<th>Simulators</th>
<th>Human Actors</th>
<th>Virtual</th>
</tr>
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<tbody>
<tr>
<td>Availability Set-Up</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Lab &amp; Space Personnel</td>
<td>Needed</td>
<td>Needed</td>
<td>Not-Needed</td>
</tr>
<tr>
<td>(to run the case)</td>
<td>Required</td>
<td>Required</td>
<td>Not-Required</td>
</tr>
<tr>
<td>Cost &amp; Risk</td>
<td>Ranges from ($20,000 to $60,000 or up), (maintenance fees $2000/per mannequin/per year. Can malfunction.</td>
<td>Variable 30 to $100/hr Human risk of injury.</td>
<td>Building Fees, minimum $10,000/Case. Rate varies based on complexity. Website maintenance minimum $50/month. No human risk, low risk of malfunction</td>
</tr>
<tr>
<td>Time Flexibility</td>
<td>Restricted</td>
<td>Restricted</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Data Collection &amp; Evaluation</td>
<td>Done manually</td>
<td>Done manually</td>
<td>Automatic logs</td>
</tr>
<tr>
<td>Faculty Need</td>
<td>Instructor Driven</td>
<td>Instructor Driven</td>
<td>Student Self-driven</td>
</tr>
<tr>
<td>Feedback/Debriefing</td>
<td>Instructor Driven</td>
<td>Instructor Driven</td>
<td>Self-Paced</td>
</tr>
<tr>
<td>Participation</td>
<td>Group</td>
<td>Group</td>
<td>Individual and Group</td>
</tr>
</tbody>
</table>

It is clear that simulations are a promising educational tool to be utilized in the developing skills related to cultural competency among health professionals; however, there is a need to establish cultural competence training efficacy, guidance and standardization (Andrulis, 2010). No research exists regarding the use of virtual simulations as a means of educating health professionals to address existing health disparities among vulnerable populations like Puerto Ricans. This study focused on addressing health disparities among the Puerto Rican population.
by educating undergraduate nursing students to care for the Puerto Rican population in a culturally competent manner using virtual simulations. With the increasing use of technology such as virtual simulations, such education is a possibility. As a result, this study focused on designing and developing content for an online virtual interactive simulation (OVIS) for cultural competency. The first step of this study was to develop content for a virtual simulation case involving a virtual Puerto Rican patient with a selected health problem of type 2 diabetes, which is relevant to the Puerto Rican population. According to a recent report released by the Center for Disease Control (CDC), among the Hispanics, the Puerto Ricans have the highest diagnosed rate of Diabetes (14.8%) (National Diabetes Statistics Report, 2014). The OVIS case design includes cross-cultural experiences for student nurses giving them an opportunity to interact with, and assess the cultural needs of the virtual patient and make culturally competent decisions. In this study, content for OVIS-Puerto Rican case was developed using a CBPR approach. OVIS has the potential of developing cultural competency in nursing students while caring for a Puerto Rican virtual patient.

Community-Based Participatory Research Approach (CBPR)

The literature suggests that community partnerships are a strategy for developing cultural competency education programs in health disciplines. Partnerships between the community and academic institutions have been known to strengthen cultural competency education programs in nursing curricula (Anderson, Calvillo, & Fongwa, 2007). Over the past few decades, CBPR research has emerged, integrating education and social action to improve health and reduce health disparities. It focuses on relationships between academic and community partners, having principles of co-learning, mutual benefit, and long-term commitment (Wallerstein & Duran,
A CBPR method was used to determine effective strategies for increasing breast cancer screenings for Arab American women, and to develop Arabic language breast cancer education screening coordination and cultural competency training for health care professionals in NYC (Ayash et al., 2011). A CBPR approach was utilized to form collaboration to develop a health ministry program for four urban black churches in which a culturally competent type 2 diabetes self-management education program was developed (Austin & Claiborne, 2011). In another study, CBPR was used to develop rehabilitation services for people with disability to address rehabilitation needs in rural and urban populations in Australia (Gauld, Smith, & Kendall, 2011).

Developing community partnerships by involving key community stakeholders in developing knowledge, as well as actively maintaining an ongoing academic-community relationship, are essential in addressing community problems like health disparities (Crist, Parsons, Warner-Robbins, Mullins, & Espinosa, 2009). Community partnerships also help develop service-learning opportunities for student nurses in diverse communities exposing students to socio-cultural realities that relate to health and disease (Calvillo et al., 2009). Another research study found that a community health course with national and international service-learning opportunities increased the cultural competence levels of baccalaureate nursing students (Amerson, 2010). Working at a systems level to foster partnerships between community agencies, academic and health care organizations is proposed as an effective approach to promoting cultural competence (Chrisman, 2007). In a recently published article, patients’ perceived cultural sensitivity of their clinical environment was shown to be associated with treatment adherence, suggesting that clinical sites that are culturally sensitive can help improve patient health outcomes (Roncoroni et al., 2014). To develop cultural sensitivity, it is important
to expose nursing students to culturally diverse patient populations; thus, community involvement in designing cultural competency educational programs can prove very beneficial.

**Research Aims**

With the increasing challenge of finding adequate clinical sites for practice, virtual learning environments can be a valuable alternative. Using programs like OVIS to educate nurses in cultural competence is a novel approach with a great potential for application in other health-related disciplines as well. To develop the cultural-competency scenarios used in an OVIS program, it is important to involve the community or cultural group that the case will represent. Community input and participation in the development of these culturally sensitive cases can provide nursing students with rich cultural experiences, thus helping in their development of cultural competency skills. With the community of interest engaged in the process of developing the simulation, it is important to evaluate the process using a formative type of assessment of the partnership, primarily to evaluate the effectiveness of the established partnership in meeting the set goals. It is vital to sustain and maintain the partnership through implementing changes based on the evaluation results. A strong partnership between the researcher and the community stakeholders is instrumental in achieving the expected outcomes. Therefore, the three aims of this study were:

1) To develop a community advisory board consisting of Puerto Rican community members, health care professionals and nurse educators.

2) To develop content (script) for a Puerto Rican OVIS case in collaboration with the community advisory board.
2a) To develop a conceptual framework for designing cultural competency simulation experiences.

2b) To determine content to be included in each stage of simulation experiences.

3) To evaluate the community advisory board group process, using both qualitative and quantitative methods, during the content development of the OVIS case.
CHAPTER 2: CONCEPTUAL FRAMEWORK

The aim of this dissertation was to develop content for an online virtual interactive simulation (OVIS) case for cultural competency for undergraduate nursing students, using a community-based participatory research (CBPR) approach, with an overarching aim of improving care for the Puerto Rican population of New York City (NYC). Since using virtual simulations for cultural competency is a fairly new concept, there was no established framework found in the literature that could guide the design and development of this case. In existing studies that utilized virtual simulation or its components for cultural competency (Giddens, North, Carlson-Sabelli, Rogers, & Fogg, 2012; Rutledge et al., 2008; Ruth-Sahd, Schneider, & Strouse, 2011; Smith & Silk, 2011), it was unclear as to which cultural competency model or theoretical framework guided the development of simulation scenarios. Therefore, it was considered of utmost importance to identify first an appropriate cultural competency framework that could guide the development of this OVIS case. The initial step in this process was to identify key components to be incorporated when designing a simulation case based upon previously established cultural competency frameworks and research studies. After the key components were identified, the next step was to find evidence-based research that supported the incorporation of these components in cultural competency education. This chapter presents a framework to guide the development of virtual simulation content, and also discusses previously conducted research studies that support the components of this framework.

Literature Review

The literature review portion of this study involved searching for publications within the last ten years in the field of cultural competency education and simulation gaming. The databases
used for the literature search included Cumulative Index of Nursing and Allied Health Literature (CINAHL), Cochrane Library, PubMed, Psych INFO and Google Scholar. The following keywords were used: “cultural competency training/education,” “cultural competency training and simulations,” “cultural competency and technology,” “cultural competency methods,” “cultural competency training and nursing,” “cultural competency and innovative methods,” “cultural competency trainings and effectiveness,” “cultural competency education models,” “cultural competency theoretical models,” “simulations and cultural competency models,” “simulations and cultural competency,” “simulations and psychosocial skills,” “simulation and student behavior, attitudes,” “simulations and communicational skills,” and “simulation and gaming.”

**Developing Framework**

The researcher reviewed previously published frameworks used to build cultural competency education among health professionals, to develop an understanding of components that are necessary to include in designing an OVIS case. The Culhane-Pera model of cultural competency, an adaptation of Bennett’s model grounded in communication theory, indicated that the development of cultural competency progresses through five stages (Kelly, 2011). In stage one, there is no recognition of the influence of culture on health care. Stage two sees a slight application of cultural competence in certain situations. There is a full understanding of the role of cultural competence in health in stage three. In stage four, the students use cultural competence in health care, and once they have reached stage five, cultural competencies are applied in all settings (Kelly, 2011). This model, which monitors how learners advance and develop from novice to expert, has previously been used to assess the cultural competency levels
of medical students (Blue, Thiedke, & Chessman, 2005). The concept of students’ moving through stages in cultural competency education is clearly stated and can be adapted for use in a simulation case. However, this framework has limitations; it lacks information on what content or experiences will assist the students in advancing through the stages toward achieving cultural competency and it also seems to lack delineation of how each stage is characterized.

Campinha-Bacote’s “The Process of Cultural Competence in the Delivery of Healthcare Services” Model consists of five interrelated constructs. These include cultural awareness, cultural desire, cultural knowledge, cultural skills and cultural encounters (Campinha-Bacote, 2007). Cultural awareness is self-examination of one’s personal biases, stereotypes, prejudices and assumptions about individuals that are different. Cultural desire is the motivation of health care professionals to engage in the process of becoming culturally competent. Cultural knowledge is a sound educational base about culturally diverse groups achieved through seeking and obtaining such knowledge. Cultural skill is the ability to collect relevant cultural data regarding a patient’s problems and accurately performing a culturally sensitive physical assessment. Cultural encounters are acts of directly interacting with clients from culturally different backgrounds. The major constructs in the model link with each other (Campinha-Bacote, 2007). The model has served as a guide to developing cultural competence curricula across many health care disciplines (Brown et al., 2008; Douglas et al., 2011; Ingram, 2012). The use of the Inventory for Assessing the Process of Cultural Competency (IAPCC), an instrument based upon the five constructs of this model, was utilized in many studies. It was used to assess the cultural competency levels of students post-activity, after their return from a study-abroad program (Ballestas & Roller, 2013), rural clinic nurses (Field & Bell, 2012), graduating nursing
students (Kardong-Edgren et al., 2010), hemodialysis nurses (Mahabeer, 2009), and midwives’ attitudes toward Orthodox Jewish couples (Noble, Engelhardt, Newsom-Wicks, & Woloski-Wruble, 2009).

There are several concepts that are relevant from this model for designing simulation experiences. Cultural awareness is especially relevant, as is the development of cultural knowledge through cultural encounters; students also develop cultural skills when caring for ethnically diverse or a different population. The concept of cultural awareness can be built into the simulation experience by having the students complete a self-assessment of their personal cultural beliefs and practices. The development of cultural knowledge is an important concept to include, as nurses need to gain common cultural knowledge of a particular group in order to provide culturally competent care. Cultural encounters are also an important concept for simulations, as interactions between patient and nurse are integral to an OVIS case, and these interactions enable the cross-cultural experiences that are needed to further build competency. The development of cultural skills can be built into simulation cases, especially through tests of communication, critical thinking and judgment skills. While these concepts can clearly be applied in the design of simulation cases, the model does have limitations of guiding clinical practice and nursing education. It includes important components to achieve cultural competency but does not specify guidelines for its application in clinical practice. Most importantly, feedback and evaluation of culturally competent experience is missing, which are important for progression and improvement in education.

Purnell’s Model for Cultural Competence is another framework that can be used to teach cultural concepts to health care providers. It includes the metaparadigm concepts of global
society, community, family, person and health (Purnell & Paulanka, 2008). The model addresses twelve domains of culture, including: localities and typography, communication, family roles and organization, workforce issues, bio cultural ecology, high-risk behaviors, nutrition, pregnancy and childbearing practices, death rituals, spirituality, health-care practices, and health care practitioners (Purnell & Paulanka, 2008). Like the others above, this model has also served to guide cultural competency course development among health professionals (Romanello & Holtgrefe, 2009). It is also used in practice as a guide for assessing how effectively culture is incorporated into educational settings like baccalaureate, master’s, and doctoral programs, as well as in research and health care administration (Transcultural Nursing Society, 2014). It is used across health disciplines like nursing, physical therapy, medicine, and occupational therapy, and has been translated into many languages, including Arabic, Flemish, Italian, Korean, Portuguese, Spanish, Swedish, and Turkish, demonstrating its global application (Transcultural Nursing Society, 2014). This model adds extra value to simulation cases through its guidance on building the specific contents to be included in an OVIS case, as well as its application in clinical practice. Importantly, it can also guide the assessment of culturally diverse patients and the knowledge development of nursing students in simulation experiences.

Leininger’s Sunrise Model illustrates the interrelationship of cultural care diversity and universality with a specific focus on the nursing care of culturally diverse or similar patients (Leininger, 2011). This model provides a comprehensive, holistic view of factors that influence culture, including worldview, social structure, language, ethno-history, environmental context, and professional systems. The Sunrise Model points out three modes of nursing decisions and actions for culturally competent care. These modes are cultural care preservation, cultural care
accommodation, and cultural care restructuring (Andrews & Boyle, 2012). Leininger’s cultural theory was used to develop cultural competency education in Sweden (Gebru & Willman, 2003), culture care of Thai immigrants in Uppsala (Lundberg, 2000), and to discover the meanings, patterns, and expressions of AIDS caregiving for Baganda women (MacNeil, 1996). It serves as a basis for cultural assessments currently transforming health care systems in Canada, Finland, Sweden, Australia, United States, Africa, Southeast Asia, Europe, and the Caribbean, utilizing a holistic knowledge to guide nursing practices (Transcultural Nursing Society, 2014). The Sunrise Model has the ability to guide the nursing care component of the simulation experiences and the types of nursing decisions and actions in simulation cases using cultural care preservation, cultural care accommodation, and cultural care restructuring. Evaluation or feedback can be given to the students based upon these modes.

Galanti’s cultural model is a shorter version of the cultural competency model for health care practitioners. It consists of “the 4 Cs,” or the four questions of call, caused, cope and concerns. The questions are as follows:

1) What do you call the problem?
2) What do you think caused the problem?
3) What have you done to cope with the problem?
4) What concerns do you have about the problem or recommended treatment? (Galanti, 2011).

Galanti’s cultural model is a simple model used to understand patient perspectives; however, culturally competent care requires more than just a basic understanding of these perspectives. The only possible application of this model in a simulation is the consideration of the patient’s
perspective, a necessary component in the development of simulation cases. This idea is applied to this study, as a CBPR approach is taken to develop the simulation content to incorporate patient and community perspectives.

The Jeffrey’s Culturally Congruent Care (CCC) Model serves as a source for developing optimal cultural competence in self and others through implementing creative, evidence-based educational activities that promote positive, culturally-competent learning outcomes for culturally diverse students and health care professionals (Transcultural Nursing Society, 2014). Optimal cultural competence recognizes that all individuals, groups, and organizations have the potential for more and requires ongoing active learning, the fostering of multicultural workplace harmony, and the delivery of the highest level of culturally-congruent patient care. The CCC model presents an organizing framework for examining the multidimensional factors involved in the process of developing optimal cultural competence; it can be applied to develop diagnostic-prescriptive strategies to facilitate learning, to identify at-risk individuals, and to guide innovations in teaching and educational research and evaluate strategy effectiveness. The CCC model discusses the 7-step approach of optimal cultural competence development: self-assessment, active promotion, systematic inquiry, decisive action, innovation, measurement, and evaluation (Transcultural Nursing Society, 2014). This model was used as a guide to evaluate the influence of cultural competence education on students’ transcultural self-efficacy perceptions (Jeffreys & Dogan, 2012). It was used later to evaluate cultural competence in clinical practice (Jeffries & Dogan, 2013), and again recently in an evaluation of service learning ability to enhance BSN students’ transcultural self-efficacy (Adams, 2013). Service learning is a teaching-learning strategy that integrates community service with instruction for an enriched learning
experience of civic responsibility and to strengthen communities (Brandy, 2015). The model emphasizes the development of creative, evidence-based, and innovative educational activity, with the limitation of guiding the development of such activities.

Among these commonly used cultural competency models, there are a few in particular that can be utilized for developing virtual simulation cases. Purnell’s twelve domains of culture can be valuable in guiding the cultural assessment of virtual patients, which may be considered a cultural skill. Some concepts based on Campinha-Bacote’s cultural competency model can also be used to develop the simulation experience. Virtual simulations could have a component focusing on completing self-assessment to develop cultural self-awareness, components geared toward improving cultural knowledge, and promote cultural encounters with a culturally diverse patient to foster cultural competency in student-patient interactions. This model, therefore, is useful in guiding the development of the objectives of simulation experiences. Jeffery’s CCC model is also helpful in simulation design, as it addresses the need for innovation and evaluation of cultural competency educational experiences. The self-efficacy tool from this model can be used to evaluate students’ self-efficacy post-virtual simulation.

Debriefing is an essential element of any simulation experience. Significant learning happens when deep insight is made explicit through reflection and discussion about an experience; this type of debriefing session can be structured to enhance student learning and offer greater opportunity to develop critical thinking skills (Dreifuerst, 2009). Therefore, it is important to structure debriefing sessions carefully, so that they can provide students more insight into the concepts and promote this type of active learning. It is noted in the case of
cultural competency simulations, that student reflection on cross-cultural experience with the virtual patient is important to consider when designing simulations (Dreifuerst, 2009).

Based upon the preceding literature review of major cultural competency models and frameworks, five key components are identified as important in the design of simulation experiences for cultural competency: cultural self-awareness, cross-cultural knowledge, cross-cultural experiences, feedback, and self-reflection. These five components were used to design a framework for simulation experience that guided the development of an OVIS case for cultural competency. It was important to find research studies that support the use of these key components in developing cultural competency. The findings from this extensive literature review have been organized to inform the design of this study and are presented in this detailed framework (see Figure 1).

**FIGURE 1.** Framework for Designing Culturally Competent Simulation Experiences (CCSE).
Framework Explained

*Cultural competency simulation experiences* (CCSE) refers to learning experiences that are designed to develop cultural competency in caring for culturally different populations through engagement with simulated environments. *Cultural self-awareness* may be described as a “looking-within” to identify personal biases, ethnocentric values, stereotypical beliefs and assumptions that might hinder from delivering culturally competent care. *Cultural self-awareness* is considered an initial step in beginning the process of cultural competency. The next component is *cross-cultural knowledge*, which refers to having an intellectual grasp of the common cultural beliefs and practices of individuals. It is important to note that individual cultural assessment is important here, as cultural groups are made up of individuals who may not necessarily fit with generalizations regarding a particular cultural group and their beliefs and practices. *Cross-cultural experiences* involve engagement in experiences with individuals or groups that represent different culture than one’s own. *Feedback* refers to the evaluation of one’s cultural competency level by others, including cultural experts. Receiving prompt feedback enables individuals to progress and improve. *Self-reflection* refers to personal reflection on one’s cross-cultural experiences.

When designing OVIS experiences, it is essential to have the learners (nursing students) go through each key component in a sequential manner, gaining experience as they move along and advance in the simulations, which is an effective game-based learning strategy (Gleason, 2015). The initial step is *cultural self-awareness*, where the opportunity is provided for the learners to self-examine their own cultural perceptions and beliefs as well as their assumptions about a particular cultural group. Once this is complete, the learners will move on to the next
step of developing cross-cultural knowledge regarding a particular cultural group. This step taken before engaging in cross-cultural experiences enables the learners to have an appropriate common cultural knowledge of the patient’s background as related to health beliefs and practices. During the cross-cultural knowledge development and cross-cultural experiences phases, learners will receive ongoing feedback in the form of scores. Learners are given the opportunity to repeat these stages to improve their scores. In the OVIS program, upon completion of the cross-cultural simulation experience and achievement of acceptable target scores, the participants are given an opportunity to self-reflect on their experiences.

**Cultural Competency Simulation Experiences (CCSE)**

The use of simulations in teaching cultural competency is at present very minimal (Rutledge et al., 2008). However, when one considers the rapid rate of virtual world simulation advancement, it becomes evident that this field holds great promise for the future of cultural competency education. What began as simple gaming has transformed into immersive virtual environments that can also act as complex learning systems. In these environments, the role-players learn how to be professionals—soldiers, astronauts, entrepreneurs, and so on (Oblinger, 2006). Knowledge and skills built into the virtual characters, objects, and environments enable learning. The players master the skills they do not have as well as integrate their skills with those of the virtual characters and other players. The role-player adopts a certain set of values and particular world views that are connected to performing activities within the specific domain of knowledge. By the end of the game, the player has essentially experienced a profession in a virtual learning environment (Oblinger, 2006). Computer-simulation technology enables looking at objects or systems that encourage players not only to wonder and learn but also to try out those
alternatives virtually and see the consequences; in this way, simulation is fundamental to education (Prensky, 2014).

Literature suggests that simulation learning enhances students’ knowledge, judgment, and critical thinking skills. A study was done among medical-surgical nurses to evaluate the effectiveness of simulation on the knowledge and critical thinking skills needed to prevent failure-to-rescue events showed it to be an effective teaching strategy (Schubert, 2012). The effectiveness of expert role modeling simulation on nursing students’ clinical judgment is supported in another study, in which expert role modeling combined with clinical simulation was shown to improve students’ clinical judgment in the care of older clients (Johnson, Lasater, Hodson-Carlton, Siktberg, & Dillard, 2012). In a high-fidelity simulation study on the leadership tasks involved in caring for multiple clients, nursing students were able to accurately identify their own errors in judgment such as, sending the wrong patient to the OR, failing to rescue a patient, and failing to delegate critical tasks to other nursing team members (Schultz, Shinnick, & Judson, 2012). Since the evidence suggests that simulations foster the improvement of knowledge and critical thinking skills, it follows that the use of simulations for cultural competency could also be effective.

Simulations have also been shown to improve student behavior and attitude, which is important to the development of cultural competency. Baccalaureate nursing students participated in a study to determine a poverty simulation’s influence on nursing students’ attitudes toward poverty. The results showed that poverty simulation is an engaging learning experience that provides the opportunity for students to gain sensitivity in working with poor populations (Noone, Sideras, Gubrud-Howe, Voss, & Mathews, 2012). The simulation was
successful in improving students’ attitudes toward patient’s spirituality, assessment of spiritual needs, ability to refer patients to appropriate spiritual caregivers, and communication skills (Costello, Faller, & Hedberg, 2012). Since students’ attitudes can change after simulation experience, it is possible that cultural competency experiences through simulations can bring about the needed change in cultural competency in students’ behaviors.

Virtual simulation is making its way into nursing education. Recently conducted studies show support for using virtual simulation in nursing education. Virtual reality simulation (VRS) for learning intravenous catheter (IV) insertions was shown to increase understanding of the sequence of steps and supplies required for IV line insertion (Jenson & Forsyth, 2012). The participants requested more time to practice and commented that repetition in performing the case scenarios would be beneficial. Another recommendation for improvement was to include a patient's face in the computer scenario. The faculty recommended VRS scenarios in learning urinary catheterization, nasogastric tube insertion, medication administration, and patient identifications. Overall, the faculty supported the use of VRS as a teaching strategy for nursing students. The system was described as being "very intriguing" and "motivating," as well as an "excellent learning tool" (Jenson & Forsyth, 2012).

An important benefit of computer simulation is that, with the appropriate competency outcome measure determined, computer simulations can test and objectively score individuals on their competence (Friedl & O’Neil, 2013). In a recent study conducted in Sweden, Virtual Patients (VP) was used to assess clinical reasoning and judgment skills of experienced pediatric nurses (Frosberg, Ziegert, Hult, & Fors, 2014). Another study conducted in Canada found computer simulations to be useful in the retention of infection control skills among nurses.
Clinical judgment scores between two groups (a computer-based simulation group and a high-fidelity mannequin simulation) were compared and found to be the same, indicating the similar utility of these two instructional methods (Howard, 2013). Carefully planned and well-designed computer-based simulations can allow students to practice skills and develop confidence, self-efficacy, and clinical judgment independently; freeing faculty of instructional tasks (Howard, 2013). Australian nurse researchers developed an effective virtual world simulation to teach an Intensive Care Unit (ICU) handover process to nurses, providing a practice tool to test analytical skills with diverse scenarios and facilitating remote learning, flexibility and automatic recording of a reviewable log from each session (Brown, Rasmussen, Baldwin, & Wyeth, 2012).

Computer-based simulations have a great potential in the field of nursing education, and there is a need to use this technology and apply it in different areas of potential growth. Providing culturally competent care is an urgent need among the 21st century nurses, and nurse educators have the responsibility of facilitating cultural competency education by threading it through the nursing curriculum. Teaching cultural competency and seeking cross-cultural experiences can be challenging tasks for educators; therefore, developing OVIS experiences could greatly benefit nurse educators as well as nursing students.

In the next section of this chapter, all constructs of the Framework for Designing Cultural Competency Simulation Experiences (CCSE) are explained in detail. This framework guided the content development of the OVIS case for cultural competency to promote the care of Puerto Ricans.
Cultural Self-Awareness

This first construct of the CCSE framework is cultural self-awareness, explained within this framework as self-examination of one’s personal biases, stereotypes, prejudices and assumptions about individuals who are different. Developing self-awareness is acknowledged in many studies to be a beginning step in developing cultural competency, as it enables the students to explore within and understand self before understanding others (Andrews & Boyle, 2012). Using a virtual community to foster cultural self-awareness among nursing students has been widely noted to be an effective strategy; some correlations were found between the frequency of the use of virtual community and cultural awareness (Giddens, North, Carlson-Sabelli, Rogers, & Fogg, 2012). Some essential elements to consider when developing cultural competency courses include culture, respect, cultural differences, sensitivity, self-awareness and humility (Rust et al., 2006). In a transcultural nursing course (NUR 707), taken at the University of Arizona, one of the first assignment of completing a self-assessment of personal culture improved my personal self-awareness of my beliefs and practices that are different from others generating self-awareness. As cultural self-awareness is so widely considered to be an element of cultural competency, it is important to include exercises that foster its development within the simulation experiences.

Cross-Cultural Knowledge

The second construct of the CCSE framework is cross-cultural knowledge, which involves seeking educational opportunities to build a sound educational base regarding culturally diverse groups. Physician assistant students who attended didactic studies and participated in clinical experiences in cultural sensitivity throughout their education showed significant
improvement in their cultural knowledge in their final years of study (Huckabee & Matkin, 2012). Improving health care providers’ education on cross-cultural issues is considered a strategy to address racial and ethnic disparities in health care (Betancourt 2003). Therefore, it is important to build *cross-cultural knowledge* into simulation experiences; knowledge is fundamental to practice.

**Cross-Cultural Experiences**

The third construct of the CCSE framework is *cross-cultural experiences* or the act of directly interacting with clients from culturally diverse backgrounds. The literature repeatedly shows that *cross-cultural experiences* and interactions have improved cultural competency levels of students. In one case, a monthly reading and discussion group with staff members of an inner-city Dominican American community organization improved understanding of issues related to cultural diversity, medical culture, physician attitudes and behaviors in practice among pediatric residents (DasGupta, Mayer, Calero-Breckeimer, Costley, & Guillen, 2010). Community immersion programs in New Zealand were shown to be effective, as medical students reported learning from observing, participating in community activities and listening to the stories shared by the families involved (Sopoaga, Connor, Dockerty, Adams, & Anderson, 2012). Transcultural health care interprofessional immersion programs gave nursing, physician assistant and public health students the opportunity to communicate and collaborate with each other in providing primary care in the Ghanaian African community (Morton, 2012). These findings suggest that it is important for health care professionals to have adequate experiences interacting with diverse cultural communities and individuals to develop cultural competency levels. Incorporating *cross-
cultural experiences in a simulation experience could be an effective way to improve cultural competency.

Interactive cultural competency workshops designed to improve medical students’ attitudes, beliefs, and cross-cultural communications were noted to be an appropriate and effective strategy (Carter et al., 2006). Workshops in this area, including cross-cultural clinical encounters and linguistically-appropriate services, improved the knowledge and skills of health care providers and administrators (Khanna et al., 2009). Cultural competency training and monthly race-stratified performance reports highlighted racial differences in the control of glycosylated hemoglobin and low-density lipoproteins levels and blood pressure, and also increased the awareness of racial disparities in diabetes care among physicians, although it did not improve clinical outcomes among black patients (Sequist et al., 2010). In 2011, interdisciplinary students’ level of cultural awareness, competence, and proficiency were shown to improve after an educational intervention of a semester-long interdisciplinary course (Hawaly-Druy & Hill, 2012). In cultural competency training, there should be active engagement among learners so that the learning experiences become transformative and not just informative (Dharamsi, 2011). Active student participation in engagement with culturally diverse population seems to be the key to developing cultural sensitivity and potentially transforming student attitudes.

An interactive online simulation for cultural competency involving an Arab American Muslim patient improved the knowledge, skills and attitudes among medical students who spoke another language in addition to English, with less than 3% of the students representing Arab Americans (Smith & Silk, 2011). There are many methods of delivering cultural competency
education among health professionals; it is evident that the engagement between students and culturally diverse patient populations is necessary to develop cultural competency. When designing or incorporating a particular cultural competency educational strategy or method, it is important for educators to consider the amount of student-patient interactions factored into the educational activity. Active student participation and engagement is important in developing cultural competency; therefore, patient-student interactions and cross-cultural experiences must be considered when designing simulations.

Feedback

The concept of feedback is borrowed from digital game-based learning (DGL). DGL applies both to the field of research game design as well as to a branch of games with specific learning outcomes (Tech Trend, 2014). Game-based learning theory assumes that play conditions the brain for learning and spurs on the transfer of information from short to long-term memory. Learners create context around the content; therefore, in designing DGL, there should be a competitive element where winning or advancing is based on learning the material and students are motivated to learn from their mistakes. The foundation to game-based learning theories include behaviorism, as games provide instant feedback, cognitivism, as learners can repeatedly practice certain skills, and most games involve progressing from one level or task to the next, and constructivism, as games allow for peer-to-peer interaction and collaboration to help construct meaning and build context around new information. Particularly within simulations, learners can explore, take risks and draw conclusions in a safe environment (Tech Trend, 2014). A recent study showed that DGL used as “learning instruction” elicited deeper learning than when used as “entertainment mode” without any negative impact on motivation. When learners
receive regular feedback about their performance, it spurs on deeper learning. A serious game environment can promote learning and motivation, provided it includes features that prompt learners to process actively the educational content (Erhel & Jamet, 2013). Thus, it can be surmised that building feedback into the simulation experiences can prove beneficial and effective in achieving educational learning outcomes.

Self-Reflection

In the area of cultural competency, *self-reflection* plays a key role. Debriefing at the end of simulation experiences involves self-reflection and gathering expert feedback on the simulation experiences. In the areas of both cultural competency and simulation, *self-reflection* is seen as a common and valuable educational activity. In past studies, study-abroad programs created an experiential learning environment, and role-modeling, reflective journaling, and group discussions were noted to be effective teaching strategies (Carpenter & Garcia, 2012). In another case, reflective journaling during four semesters of community clinical experience led to the development of cultural humility in nursing students (Schuessler, Wilder, & Byrd, 2012). Cultural humility is the ability of becoming an other-oriented person or open to the other persons in relation to aspects of cultural identity (Hook, Davis, Owen, Worthington and Utsey, 2013).

Cultural competence education should teach students cultural competency skills through the use of interactive educational methods like the standardized patient, role-play and self-reflective journals (Kripalani, Bussey-Jones, Katz, & Genao, 2006). Experienced physicians improved their cultural awareness through writing an extended case narrative that reflected back on their cross-cultural experiences with culturally diverse patients (Foreman, Hark, & DeLisser, 2012). Self-evaluation and feedback strategy was also shown to be effective when nursing
students participated in debriefing sessions post-simulation (Cato, Lasater, & Peeples, 2009). Self-debriefing is suggested as an effective way of reflecting back on the simulation experiences (Fanning & Gaba, 2007). As expert feedback is built in throughout the virtual simulation, self-reflecting on personal experience at the end becomes a very effective way to reach a deeper level of learning and understanding.

**Summary**

This chapter presented a detailed view of recent studies conducted in the field of cultural competency. It provided a CCSE framework, which guided the development of a Puerto Rican simulation case for cultural competency in this study. The major components identified as necessary to include in the OVIS design were *cultural self-awareness, cross-cultural knowledge, cross-cultural experiences, feedback, and self-reflection*. The next chapter will demonstrate the use of this framework for designing and developing content for the OVIS program using a CBPR approach.
CHAPTER 3: RESEARCH METHODOLOGY

This study had three main aims. The first aim of this study was to develop a community advisory board (CAB) consisting of individuals from the community that were of Puerto Rican descent including health professionals and nurse educators. The second aim of this study was to develop content for an Online Virtual Interactive Simulation (OVIS) Puerto Rican case. The sub-aims of the second aim were to develop a conceptual framework and determine the content for each stage of the OVIS case. The third aim of this study was to evaluate group effectiveness by using both qualitative and quantitative methods. This chapter contains details regarding meeting the three major aims of this study, and is organized accordingly. This chapter also explains the process of developing the OVIS script using the CCSE framework, described in Chapter 2, and it guided the process of developing content for an OVIS – Puerto Rican case. This chapter begins by describing the CBPR approach and its use in developing educational materials, the importance of a CAB in CBPR study, and the three aims of the study.

Community-Based Participatory Research

This section presents a brief introduction of CBPR, as well as the literature review findings on the use of this approach in educational research. CBPR is a method of conducting research by partnering researchers with those directly affected by, and knowledgeable of, the local circumstances that impact health (Israel, Eng, Schulz, & Parker, 2013). CBPR begins with a research topic of importance to the community and aims to combine knowledge with taking action, including social change, to improve health (Horowitz, 2009). The literature demonstrates that the CBPR approach was utilized in many studies for various purposes. It was used in the development of a culturally-appropriate measuring instrument (Viswanathan et al., 2004), as well
as a series of educational activities within a church to increase cancer awareness and to motivate participants to seek recommended screening for early detection (Beck, Young, Ahmed, & Wolff, 2007). Evidence from this study indicates that the involvement of community members in the decision-making and planning process is more likely to produce meaningful change in the community (Beck, Young, Ahmed, & Wolff, 2007). In a pilot study, the CBPR approach was used to develop a Family Education Diabetes Series (FEDS) and was implemented and evaluated with 36 intervention participants (Mendenhall et al., 2010). Data obtained across baseline, 3-month, and 6-month time periods showed significant improvements in weight, blood pressure, and metabolic control (Mendenhall et al., 2010). In another study, researchers used CBPR approach to design and evaluate an educational video on tuberculosis (Wieland et al., 2013). Using focus group data, they developed the content of the video that was produced and delivered to adult learners and their educators. The video was evaluated by learners on a 3-point Likert scale for “acceptability” (3 items), “knowledge” (4 items), and “self-efficacy” (2 items) before and after viewing. A total of 159 learners (94%) rated the video as highly acceptable. Knowledge of the participants regarding tuberculosis improved after viewing the video (56% correct vs. 82% correct; p <.001), as did tuberculosis-related self-efficacy (77% vs. 90%; p <.001). The findings from this study recommend a CBPR approach in designing health education materials to enhance the efficacy of these tools (Wieland et al., 2013). Using the CBPR approach in developing culturally-congruent virtual simulations may prove an effective strategy. Cultural congruence is acts or decisions that fit with individual, group, institutional cultural values and beliefs, to provide meaningful, beneficial health care services and wellbeing (Leininger, 2011).
In one study related to nursing education, co-teaching and co-learning experiences involving community members provided opportunities to develop mutually respectful and trusting relationships setting the stage for partnerships between communities and schools of nursing to collaboratively design, implement and integrate formal and informal cultural competence components in nursing curricula (Anderson, Calvillo, & Fongwa, 2007). This study implies that CBPR is an approach that could strengthen cultural competency in nursing education and practice. In another case, a community-university partnership was used to develop a graduate nursing program curriculum at the University of Minnesota where community leaders and health workers in partnership with faculty and students made recommendations about a graduate nursing curriculum. Five areas of competencies were recommended for graduate nursing students to improve the care of diverse populations. These included; self-awareness, basic knowledge of culture and identity, attitudes that promote cross-cultural communication, cross-cultural clinical skills, and advocacy skills (Axtell, Avery, & Westra, 2010). CBPR is identified for improving the care of diverse populations; there is a lack of literature regarding CBPR’s use in shaping nursing education for improved nursing care of culturally diverse, vulnerable patients. It is important to note that the use of CBPR approach in designing education tools for cultural competency education can be valuable, with the involvement of consumers of care in developing educational content. Therefore, in this study a CBPR approach was taken by using a community advisory board (CAB) which contributed to the development of OVIS content.

**Community Advisory Board (CAB)**

This section describes the *formation, operation and maintenance* of a CAB (Newman, Andrews, & Williamson, 2011), its importance in CBPR studies, and its use in this study. CAB
enables community representation and is considered as a key component in successful CBPR studies (Newman, et al., 2011). CAB consists of members that reflect the community of interest; members may share a common interest, identity, culture, illness, history or language (Israel, Chekoway, Schulz, & Zimmerman, 1994). In CBPR studies, CAB engages in three processes: formation, operation, and maintenance (Newman et al., 2011). In the formation process of CAB, the role and purpose of a CAB, as well as its identification and recruitment of key stakeholders from the community, are established. In the operation process, the logistical operation of the CAB is determined; this includes the development of guiding principles to assure that the values of the community are represented and respected, and leadership and decision-making protocols are established. The maintenance process addresses the evaluation of CAB actions and outcomes and plans for sustainability. Ongoing evaluation and sustainability are essential to the maintenance of CABs. Results of evaluation assessments and strategic planning for sustainability may require CABs to re-address the processes of formation and operations (Newman et al., 2011). In CBPR, it is important for the CAB to have mutual recognition, sense of belonging, shared purpose and the ability to unite to be effective in working together (Israel, Eng, Schulz, & Parker, 2013). Activities that foster trusting relationships among members are especially necessary for the early stages of CBPR. Some activities recommended in the literature include icebreaker games, which are brief interviews with each member followed by members introducing each other (Israel et al., 2013). In this study, the first aim was to develop a CAB and the approaches used in its development are presented in detail under the first aim.
Aim I: Development of a Community Advisory Board

For this study, the CAB consisted of two groups; the *cultural group*, and the *clinical-educational group*. The *cultural group* consisted of cultural experts from the community who were of Puerto Rican origin or descent and the *clinical-educational group* consisted of clinical and educational experts who were health professionals and educators of Puerto Rican origin/descent or had the experience of caring for the Puerto Rican population. In this section, the formation, operation and maintenance of the community advisory board is presented. It includes the strategies utilized to recruit community members as well as clinicians and educators.

**Formation of CAB**

In CAB, members assume an advisory role in which they are providers of information, guidance or suggestions offering a community perspective on the issue; therefore, it is important to select and recruit appropriate community representatives to serve on the board (Moris, Maiorana, Koesler, Sheon, & Richards, 2003). The researcher or research team, however, may choose to accept or reject the advice. For this study, the CAB included two distinct groups; the first was a *cultural group*, which consisted of community members of Puerto Rican origin/descent who reside in New York; the second group was the *clinical-educational group*, which consisted of nurses, nurse practitioners, nurse case manager, nurse educators, a public health educator and nursing students. The clinicians in the *clinical-educational group* were of Puerto Rican descent or had the experience of working with the Puerto Rican population in NYC and the educators were of Puerto Rican descent and had experience developing and critiquing test items. The nursing students in the *clinical-educational group* were of Puerto Rican descent enrolled in nursing programs that used virtual simulations.
In this chapter Table 2, reflects the formation process of this study. The initial plan was to have three specific groups within the CAB (cultural, clinical, and educational). However, during the recruitment process of advisory board members, the health care professionals and educators expressed their interest in having a larger board, which enabled them to connect and network with each other. They expressed their desire to work in collaboration with this study; therefore, the clinicians and the educators were combined into the clinical-educational group of the CAB for this study, and the content development activities were revised so that it would be feasible for the clinical-educational group to work together in developing the OVIS content.

Selection of members. Selection of appropriate board members necessitates specific inclusion criteria that reflect the goals of the research and the intended functions and purpose of the CAB (Butterfoss, 2007). People or agencies with specific expertise in the topic of interest are necessary to create a knowledgeable CAB and to help position the study favorably in the community; newer CABs are often encouraged to start small and to involve a few community-based organizations that are highly regarded by community members (Israel et al., 2001). As the research program progresses, the CAB can decide whether to expand its membership by inviting service providers, agency leaders, and other community stakeholders to participate in an advisory or partnering role (Newman et al., 2011).

For this study, the CAB assumed an advisory role. The selection criteria for cultural group members included community members who self-identified being of a Puerto Rican origin or descent, have the ability to speak, read, comprehend and write in the English language, and are New York residents. The minimum age limit to participate was 18 years, and the maximum age limit was not set because it was felt that older adults can bring a wealth of experience. The
cultural group members reflected Puerto Ricans, as they were of Puerto Rican descent representing the community of interest in this study. Some members were born in Puerto Rico and some in New York. The cultural group members consisted of first-generation Puerto Ricans who moved into U.S. mainland, and Puerto Ricans who were born in New York. They all shared a common interest in improving the health of their community, most of them were bilingual, and shared Puerto Rican cultural identity. They worked in different sectors and represented diverse age groups. They brought a wealth of knowledge regarding the common health care practices and beliefs of Puerto Ricans living in NYC and along with the researcher developed the cross-cultural knowledge and cross-cultural experience part of the OVIS case.

The criteria set for the selection of clinical-educational group members involved targeting health professionals such as physicians, nurse practitioners, and pharmacists who either identify themselves as Puerto Rican in origin or descent or practice among the Puerto Rican population. The criteria set for the selection of educators were members who self-identified as Puerto Rican in origin or descent and had the experience of writing and critiquing test items. Also, the original criteria for limiting the number of members was changed as it was felt important to invite all those individuals who met the criteria and were interested in joining the advisory board. The reason for doing so was to maintain adequate attendance in each meeting because it was predicted that some members might be unable to attend all meetings due to personal commitments or undue circumstances. Additionally, the length of time needed for content development was unpredictable. The plan was to have monthly meetings until the content was developed.
Recruitment process. It is important to select those individuals who express an interest in serving, as well as being deemed a good fit for the intent and purpose of the CAB (Newman et al., 2011). It is important for the group members to feel accepted through mutual recognition, which increases the likelihood of CBPR success (Forsyth, 2009). The recruitment process itself can be an important step in fostering a sense of belonging among the group members. A “reputational method of recruitment” is suggested in CBPR, meaning that early group members recommend other members whose value and capability they know and recommend; this type of recruitment has helped to build a foundation of trusting relationship to serve a partnership well (Israel et al., 2013).

A reputational method of recruitment was used in this study for both the cultural and the clinical-educational group starting from an initial contact. For the cultural group, the researcher had known an initial contact from the community who was of Puerto Rican descent; the researcher had previously engaged with this individual during the planning of a medical mission abroad. The researcher met with the initial contact over lunch and discussed the research study and explained the need and the significance of this study. The researcher emphasized the fact that the study was directly related to improving the health of the Puerto Rican community through educating nurses. The initial contact was very interested in this study and agreed to become a CAB member. This initial contact played a key role in directing the researcher to other members of the Puerto Rican community. The researcher contacted every lead via email, phone calls, and personal visits. The researcher spent time with the potential board members over lunches in the community and discussed the study and its potential impact on the Puerto Rican community. The researcher also got involved with two community agencies: Coordinated Agency of Spanish
Americans (CASA) a government institution and the Hispanic Counseling Center (HCC), a local non-for profit agency. The advisory board meetings with the cultural group were held in the conference room of these institutions.

For establishing the clinical-educational board, the researcher’s initial contact was a previous acquaintance who had served as the president of the National Association of Hispanic Nurses (NAHN) NYC chapter. This person referred the researcher to the current president, who invited the researcher to present her study at the NAHN NYC chapter meeting. The researcher presented her study at the chapter meeting and received very positive feedback. A few members who were nurses of Puerto Rican descent were very interested in becoming a part of this study and they further referred the researcher to other nurses and clinicians that they thought might be interested in joining this study. The nurses also offered to assist with arranging the board meetings in two locations in NYC; the NY Blood Center and the Veterans Affairs Hospital in Manhattan NY. A few board members worked in these locations, and they were instrumental in obtaining permission to use their facility for this study. The researcher contacted the Center for Puerto Rican Studies at the City University of New York (CUNY) and was referred to two Puerto Rican faculty members within CUNY. The researcher contacted these faculty members via email and phone calls, and they agreed to join the advisory board. The researcher also contacted two nursing faculty from the University of Puerto Rico was referred by one of the dissertation committee members and they both joined the board and offered their expertise remotely through emails.

The researcher ensured that the selected members met the criteria for maximum input to achieve the study goals. Upon meeting the eligibility criteria, each member was sent a formal
invitation letter via email inviting them to join the CAB and their contact information was obtained for future communications. Most of the communication between the researcher and the board members occurred using the University of Arizona, email address.

**Group cohesion.** Activities that help group members learn about one another can be instrumental in developing a working relationship, as increased group cohesiveness leads to increased group productivity (Henderson, 1996). One example is a human bingo activity, where members identify and obtain the signatures of others who have similar or specific characteristics, helping them to connect personally (Israel et al., 2013). In another study, the group members were asked to bring an object that reminded them of home. The nametags of group members and the objects were numbered. The members were then asked to explain the object and its meaning to the group and then to give the object to the group member with the matching number (Becker, Willis, Joe, Baker, & Shada, 2002). Since the reputational method for selection was used in this study, there was already some familiarity between the members. Therefore, the need for using icebreaker games was eliminated. However, in the first meeting all members were asked to introduce themselves to the group. During the subsequent meetings, there was a brief introduction of all members. During each meeting, dinner was served, and there were much group interactions noted during dining. Serving food is a sign of hospitality during any gathering in a Puerto Rican culture, and the members expressed their appreciation.

**Group size.** In CBPR research, a small group size is recommended for effective communication and active member engagement; larger group sizes can add complexity to the group process coordination (Israel, Eng, Schulz, & Parker, 2013). Group dynamics research suggests a small group size of about eight to twelve members for optimal communication.
effectiveness (Johnson & Johnson, 2008). For this study, the original plan was to have a total of eight to twelve CAB members; the *cultural group* to have four to six members, the *clinical group* two to three members, and the *educational group* to have two to three members. However, with a number of positive responses received during the recruitment process it was felt that all eligible members who demonstrated an interest in attending the board meeting should be invited to join the board. The total number of members invited to join the CAB were 20, which included nine members of *cultural group*, nine in the *clinical-educational* group, with two educators working remotely from Puerto Rico. However, it is important to note that the average attendance at the meetings for the *cultural group* was seven and for the *clinical-educational* group were six. The reason for this was even though meetings were planned at least a month in advance; some members mentioned family commitments and unplanned travels as reasons behind the absence. However, all members physically attended at least one or more meetings. Some members send their critique via emails when they were unable to attend the meeting. Two members worked exclusively from Puerto Rico and did not physically attend any meetings. Table 3 presents the formation process of the community advisory board. It outlines the formation process of the CAB, including selection criteria and details on recruitment method, group size, and group activity.

<table>
<thead>
<tr>
<th>Selection Criteria for CAB Members</th>
<th>Community Members</th>
</tr>
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<tbody>
<tr>
<td>- Self- Identify as having Puerto Rican origin or descent</td>
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<tr>
<td>- Above the age of 18 years</td>
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<tr>
<td>- Have the ability to speak, read, comprehend and write in English language</td>
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<tr>
<td>- Live in New York</td>
<td></td>
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<tr>
<td>Health Professionals (Nurse Practitioners, Nurses)</td>
<td></td>
</tr>
<tr>
<td>- Self-identify as Puerto Rican OR</td>
<td></td>
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<tr>
<td>- Practice among Puerto Rican population</td>
<td></td>
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<tr>
<td>Nurse Educators</td>
<td></td>
</tr>
<tr>
<td>- Self-Identify as Puerto Rican</td>
<td></td>
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<tr>
<td>- Have the experience of writing and critiquing test items.</td>
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<tr>
<td>Nursing Students</td>
<td></td>
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<tr>
<td>- Self-Identify as Puerto Ricans</td>
<td></td>
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<tr>
<td>- Enrolled in a nursing program</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Reputational Method of Recruitment</th>
<th>Starting with initial community contact, and then considering suggestions for other members of the CAB.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Invitation to join CAB</strong></td>
<td>- Upon meeting eligibility criteria each member was given a formal invitation letter to join CAB.</td>
</tr>
<tr>
<td>- Contact information was obtained.</td>
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<table>
<thead>
<tr>
<th>Group Activity for Building Mutual Relationships</th>
<th>- Self-introduction of group members.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Participate in Dinner</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Group Size</th>
<th>Cultural Group Members: 9</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Clinical-Educational Group Members: 11</td>
</tr>
<tr>
<td></td>
<td>Total: 20</td>
</tr>
</tbody>
</table>

**Operation of CAB**

Established operating procedures provide logistical guidance regarding how the team works together to complete tasks, including setting the agenda and documenting minutes. It is important to pay attention to the group dynamics that are identified in CBPR. These include trust among members, respect of one another, communication among members, respect for confidentiality, engagement, decision-making, the acknowledgment of conflict, and personal contributions (Israel et al., 2013). Developing trust among CBPR partners is considered the most important way to form effective partnerships, and can be accomplished by showing respect,
following through, maintaining confidentiality and ongoing relationships, which were incorporated in this study and were presented in this section. In this study, at the end of each meeting, the group dynamics were evaluated to measure partnership effectiveness. The evaluation findings from each meeting are presented in chapter 4. Table 4 outlines the operational process, which includes the group dynamics and group participation; this table also includes methods of maintaining these dynamics during the CAB process.

**Initial operational procedures.** When establishing procedures, group dynamics, and accepted social norms must be considered to ensure open communication (Israel et al., 2013). Establishing operating principles is another task that occurs in the initial stages of CAB group formation. The operating principals and group dynamics were clearly established and were communicated with the advisory board during the meetings. These are presented in the following paragraphs along with information regarding the ways it was addressed during the process of developing the OVIS script.

**Maximizing group participation.** Maximizing group participation is encouraged throughout the process, and can be accomplished using different methods (Israel et al., 2013). One method is to allow the group members to organize and write down their thoughts before the discussion begins. Members then share their notes and organize their responses in categories. Another approach is to divide the group into several small groups to discuss and generate ideas and then come back together for the large group discussion. Individual reflection time and the chance to work in small groups gives members opportunities for more input, as some members may need more time than others to articulate their ideas. Small group discussions enable those members who are uncomfortable speaking in a large group to participate. One system found in
the literature is the nominal group technique (NGT), where the facilitator poses a question and each member writes down responses. One at a time, group members share their responses with the rest of the group. The facilitator writes each response verbatim in a place that is visible to all members. Members are asked if they have written the same idea; through a show of hands, the facilitator tallies the number of participants who have exactly the same idea on their list. This process continues until all lists are exhausted. Members then clarify ideas and combine those that are similar; the facilitator ensures that the integration of ideas does not eliminate ideas (Israel et al., 2013). Studies have shown that NGT produces more ideas, and members report a high level of satisfaction with the process (Forsyth, 2009), however it is unclear if the population were Latino members. For this study, parts of NGT process were used as applicable and feasible in the various stages of OVIS content development. To encourage maximum group participation the researcher ensured that all members had access to the script materials and guidelines for critique and each member had the opportunity to critique during meetings as well as remotely. The researcher led discussions by first asking a question based on the OVIS content and asked each member to take turns to share their ideas and comment. Since the group was small in size, each member participated well. The meetings were audiotaped with permission and the researcher took notes as members commented. During the advisory board meetings, a facilitator was assigned for time keeping that was valuable in meeting the goals of the meeting. The virtual patient responses in the cultural assessment stage were generated using the on screen inputting method; the researcher displayed the question on the screen using a projector and the cultural group generated patient responses. The researcher typed the virtual patient responses on the
screen as they were generated and the cultural group worked together in generating the responses.

**Decision making.** Decision-making during CAB group session is important. The literature suggests the use of a consensus approach in CBPR research, versus Robert’s Rules of Order, which may inhibit open communication (Israel et al., 2013). A consensus approach is described as a process where group members work together, have open communication, and collectively arrive at a conclusion with the feeling that all members had a fair chance to influence the decision (Johnson & Johnson, 2008). A 70% rule is used as a form of consensus; all members must agree at least 70% with a decision, even if they do not support it 100%. This approach was adopted by the Detroit Urban Research Center in their CBPR studies (Israel et al., 2013). During the study, there were no occasions during meetings where a consensus approach needed to be used as mostly the group came to a conclusion together on various topics and there were no obvious conflicts noted. However, in the actualization of OVIS content, consensus approach will be used to determine the correct branch for scoring in the clinical situations presented in Chapter 4.

**Mutual respect.** CAB members and the researcher can display trustworthiness by considering the ideas and opinions of others; feeling respected is very important and will most likely lead to support of the final decisions (Johnson & Johnson, 2008). In the study, the initial plan was that during group meetings the researcher will serve as a facilitator. However, during the initial cultural board meeting, it was felt that there was a need for a facilitator for time-keeping to accomplish the set goals. Therefore, a facilitator from CASA was appointed to keep time and prompted the board to move to the next topic, which served very well in meeting the
planned goals for the meeting. To maintain mutual respect, the researcher ensured that all ideas and opinions were completely heard and all members were able to finish their statements, before changing the topic of discussion. The facilitator took the lead in bringing the conversations back on track when it was felt that the conversations were drifting away from the goals of the meeting.

**Communication.** The researcher ensured that open communication was maintained between the researcher and CAB members. Results of CAB meeting evaluation data and the progress of the study were shared with the CAB members. Members were sent early notifications and reminders of meeting dates, times and agenda via email and phone calls. Minutes from the meetings were shared with the respective CAB members and were reviewed for any changes during the meetings. The researchers introduced self and summarized the reason for the meeting and goals at the beginning of each meeting. All members were asked to introduce themselves by sharing what job or work they did and their health concerns regarding the Puerto Rican population. When CAB members spoke, their input was well appreciated, and the discussions were kept as informal as possible. The researcher verbally appreciated and thanked them for their contributions during the meetings. The CAB members shared freely and participated in the discussions. In the *cultural group* the researcher used a facilitator to keep the group on track. The facilitator was used due to diversion to unrelated topics by some members, which were irrelevant to the meeting goals. However, the facilitator was not used in the *clinical-educational* group as the group rarely drifted from the topic and time-keeping was not necessary.

**Confidentiality.** The researcher ensured that confidentiality was maintained throughout the study. All discussions that occurred within the group were kept confidential. Evaluation data were obtained from CAB members at the end of each meeting, and anonymity was maintained.
The members agreed to be audiotaped and in few meetings video clips were taken with permission from the board members. The researcher took notes during the meetings and drafted the minutes within 24 to 48 hours post meeting. The advisory board members were assured that there was no misuse of the information gathered and that the content of discussions during the meetings was kept confidential. The CAB members were made aware that evaluation data will be saved in a locked cabinet and anonymity will be maintained.

**Ongoing relationship.** All members were acknowledged in the CAB meetings. In all meetings, dinner was served. The researcher stayed in touch with the CAB members and communicated the research progress with them. All members participated in the group meetings, and the researcher ensured that all members were given an opportunity to speak and share their experiences. All members were individually acknowledged by displaying their names during the study presentation at the 2nd Canadian Doctoral Network Conference on June 11, 2015, held at the University of Regina, Saskatchewan, Canada. All the members agreed that they wished to be personally recognized in all presentations and publications about the study. Table 4 outlines the operational process, which includes the group dynamics and group participation; this table also includes methods of maintaining these dynamics during the CAB process.
TABLE 4. CAB Operational Process. (Newman et al., 2011)

<table>
<thead>
<tr>
<th>Group Dynamics</th>
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<tbody>
<tr>
<td>Mutual Respect</td>
<td>- Mutual respect was maintained with the group by considering others’ ideas and opinions.</td>
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<tr>
<td></td>
<td>- Agreeing to allow members to finish their statements</td>
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<td></td>
<td>- Changing subjects when everyone agreed to move on.</td>
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<tr>
<td>Communicate with each other</td>
<td>- There was open communication maintained between the researcher and CAB members.</td>
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<td></td>
<td>- Results of formative evaluation given by CAB members were shared during the meeting.</td>
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<td></td>
<td>- The progress of the study was shared with all the members.</td>
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<tr>
<td>Respect confidentiality</td>
<td>- All discussions were kept confidential within the group.</td>
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<td></td>
<td>- Evaluation data collected were anonymous</td>
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<tr>
<td></td>
<td>- Meetings were audio taped with permission video-clips of few meetings were taken with permission as well.</td>
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<tr>
<td></td>
<td>- The members were assured that there will be no misuse of the information gathered and security of the content was maintained.</td>
</tr>
<tr>
<td>Engage in ongoing relationship</td>
<td>- Each member was acknowledged during meetings and all communications.</td>
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<tr>
<td></td>
<td>- Each meeting was celebrated with food.</td>
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<tr>
<td></td>
<td>- Members are willing to continue on the board for the future during the actualization of OVIS.</td>
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<tr>
<td>Make decisions</td>
<td>- Consensus Approach was selected as a plan for decision making.</td>
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<tr>
<td>Address conflict</td>
<td>- The Consensus approach was explained at the first meeting.</td>
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<tr>
<td></td>
<td>- Early meeting agenda was set so that members were aware of the planned activity during each meeting.</td>
</tr>
<tr>
<td>Personal contribution</td>
<td>- The researcher ensured that all members were involved during the meeting and had a chance to voice their opinions and offer feedback.</td>
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<tr>
<td></td>
<td>- Members were acknowledged in OVIS content and public presentations related to the study and in future publications.</td>
</tr>
<tr>
<td>Maximize group participation</td>
<td>- Group participation maximized through giving handouts of presentations to each members.</td>
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<tr>
<td></td>
<td>- Taking turns and giving each member an opportunity to speak</td>
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<tr>
<td></td>
<td>- On screen inputting and development of script.</td>
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</tbody>
</table>

**Maintenance of CAB**

To maintain the effectiveness of CAB, it is important to evaluate group process effectiveness. A multi-method approach, when used to collect evaluation data, increases the likelihood of a well-rounded assessment of the CAB structure and processes (Newman et al., 2011). Member interviews, meeting observations, focus groups, activity logs, and member
surveys provide different perspectives of the partnership and enhance the comprehensiveness and credibility of evaluation (Butterfoss, 2009). Quantitative methods, such as surveys, provide a standardized measure of group processes, which can also serve as a baseline measure and can be used after each session to gauge continued effectiveness (Feinberg, Gomez, Puddy, & Greenberg, 2006). It is important to sustain the CAB in any way possible; some inexpensive ways of recognizing members’ contributions include potluck dinner parties, awards or honors, positive letters to a member's colleagues and public recognition in local media (Newman et al., 2011). In CBPR studies, formative evaluation is done to receive ongoing feedback for improving the CBPR partnership (Israel et al., 2013). In this study, formative evaluation was conducted on an ongoing basis. Formative evaluation was done using a short questionnaire and open-ended questions. The responses were analyzed both qualitatively and quantitatively.

At the end of every advisory board meeting, the members were asked to write responses to three open-ended questions, which were analyzed qualitatively and the members were asked to rate the meeting effectiveness using a short survey, which was analyzed quantitatively. The details of these evaluation tools and analysis are presented in later sections of this chapter. Evaluation data gathered at the end of each meeting were analyzed both qualitatively and quantitatively and were presented to the board at subsequent meetings. The evaluation findings and changes that were instituted are presented in detail in chapter 4. Table 5 outlines the maintenance process, and includes criteria for evaluation and maintaining ongoing relationships with those in the CAB by rewarding and honoring each member.
TABLE 5. **CAB Maintenance Process.** (Newman et al., 2011)

| **Evaluating Group Process Effectiveness** | - Meetings were evaluated using the following:  
- Three open-ended question responses (Qualitatively)  
- Short Questionnaire (Quantitatively)  
- Evaluation data were analyzed after every CAB meeting  
- Findings of evaluations were presented at the beginning of the next meeting. |
| **Recognizing CAB members’ contribution** | - A thank-you card and a gift card ($25) were given to all members.  
- Dinner was served at each meeting. |
| **Maintaining ongoing relationship** | - Each member was invited to continue on the board (post dissertation) to critique next phases of building the OVIS in a virtual platform, followed by a testing phase, where the developed program will be pilot-tested with nursing students. |

**Aim II: Development of the OVIS Content**

This section will present in detail the process of developing a culturally-congruent simulation script guided by the conceptual framework using the Community Advisory Board. It will include the determination of content and resources included in each stage of the simulation and the process of simulation script development using the CCSE framework.

**Process of OVIS Script Development**

Guided by the CCSE framework, the OVIS script was developed using partnership between the researcher and the CAB members. The CCSE framework consists of five major constructs that guided the development of OVIS content: *cultural self-assessment, cross-cultural knowledge, cross-cultural experiences, feedback,* and *self-reflection.* Table 5 outlines the details regarding the CAB meetings and activities.

**OVIS Experiences**

Guided by the CCSE framework, the OVIS program will offer nursing students the following experiences:
1. Self-assessment of personal, cultural beliefs and practices using the Cultural Competence Health Practitioner Assessment (CCHPA), a reliable tool established by the National Center for Cultural Competence (American Nurses Association, 2014).

2. Knowledge development regarding common Puerto Rican cultural health beliefs and practices through watching a video presentation, answering questions and receiving feedback.


**Resources Used in OVIS Stages**

In this section, the resources used in each step of the script-building process are organized here using the CCSE framework stages.

**Cultural self-awareness.** In the first stage of simulation, “cultural self-awareness”; an established assessment that is commonly used for educational purposes will be utilized during actualization of OVIS content. Therefore, in this research study this section did not need content development. The American Nurses Association (ANA) recommends using the Cultural Competence Health Practitioner Assessment (CCHPA) tool developed by the National Center for Cultural Competence. This tool was developed to promote the cultural and linguistic competence of health practitioners as an essential component in eliminating health disparities among racial and ethnic groups (American Nurses Association, 2014). It was developed for use in programs funded by the Bureau of Primary Health Care (BPHC), Health Resources and Services Administration (HRSA), and U.S. Department of Health and Human Service (DHHS). The ANA
Diversity Awareness Study has been granted permission by the Georgetown University National Center for Cultural Competence to connect professional nurses to their online self-assessment module. CCHPA can be used as a part of training or educational activity; the National Center for Cultural Competence can be easily contacted for permission (National Center for Cultural Competence, 2014). Many educators have gained permission to link students to the online educational tool as part of their learning experience.

The CCHPA is based on three assumptions: (1) cultural competence is a developmental process at both the individual and organizational levels (2) with appropriate support, individuals can enhance their cultural awareness, knowledge and skills over time and (3) cultural strengths exist within organizations or networks of professionals but often go unnoticed and untapped. The process of cultural competence assessment can benefit practitioners by heightening awareness, influencing attitudes toward practice, and motivating the development of knowledge and skills (National Center for Cultural Competence, 2014). The CCHPA captures a wide range of data in its six subscales, including, Values & Belief Systems, Cultural Aspects of Epidemiology, Clinical Decision-Making, Life Cycle Events, Cross-Cultural Communication and Empowerment/Health Management. CCHPA is designed as an online self-assessment and educational tool only, and is not available as a printed instrument; it has not been validated as a measure to be used for evaluation activities.

**Cross-cultural knowledge.** In the cross-cultural knowledge stage of simulation, published resources like articles and textbooks on the health beliefs and practices of Puerto Ricans were utilized (Center for Puerto Rican Studies, 2012; Molina, 2001; Purnell, 2013). A PowerPoint presentation combining all information was developed and critiqued by the CAB. It
is important to note that no cultural groups can be considered to have exactly same health beliefs within a group; there are individual differences, and also acculturation plays a key role. Acculturation refers to change of one’s cultural patterns to those of the host society (Spector, 2004). Additionally, it is also important to consider that there are individual differences, based upon personal experiences and interactions with the environment. Therefore, it is important to complete an individual assessment to identify uniqueness in beliefs and practices, which is designed in the OVIS experience in the cross-cultural experience section. There are common health beliefs and practices that often exist within ethnic, cultural groups; based on this fact, the health disparities are noted and reported, and health interventions are designed for a population group and not individuals (Gehlert et al., 2008; Peek, Cargill, & Huang, 2007). In the cultural knowledge stage of the simulation, the idea is to give the nursing students adequate information so that they develop knowledge regarding the common health beliefs and practices of the Puerto Rican population living in the U.S. mainland. For this part of the simulation, the researcher created a (words-only) PowerPoint presentation on the common health beliefs and practices of the Puerto Rican population from multiple published resources. The cultural group of the CAB reviewed the presentation slide by slide and offered feedback. Based on this feedback, changes were made to the PowerPoint presentation. In the actualization phase, this presentation will be converted into a screencast video with narrations. A screencast video is a digital recording of the computer screen accompanied by audio narration (Winterbottom, 2007). This video will be embedded into the virtual simulation and will have the capability of being viewed by the students before they progress to the next stage of cultural assessment. This video can be viewed multiple times as desired to help improve learner scores on the post-video cross-cultural quiz. The video
will serve as a resource in simulation to develop cultural knowledge of students before
completing a cultural assessment on a virtual patient.

**Cross-cultural experience.** In the cross-cultural experience stage of simulation, cultural
assessment of the virtual patient will be done by the nursing student. In cultural competency, it is
also important to focus on patient uniqueness, as individual patients may have health beliefs that
are different from others who belong to the same cultural group. Therefore, it is important to do a
cultural assessment of a patient; this simulation provides an opportunity for the nursing students
to complete cultural assessment on a virtual patient. Cultural assessment developed in this study
was based on Purnell’s Model (Purnell, 2013). This model has guided cultural competency
course development among health professionals (Romanello & Holtgrefe, 2009), and guided
assessment in education, research, and health care administration (Transcultural Nursing Society,
2014). It is used across health disciplines such as nursing, physical therapy, medicine, and
occupational therapy, and has been translated into many languages including Arabic, Flemish,
Italian, Korean, Portuguese, Spanish, Swedish, and Turkish demonstrating its global application
(Transcultural Nursing Society, 2014). This model adds extra value to the simulation cases, as it
guides the nurse’s assessment of the virtual patient. In the cultural assessment part of the
simulation, which assesses the ethno-cultural attributes of an individual, questions were derived
from Purnell’s model. However, only questions from this model that were relevant and
applicable as determined by the researcher post a pilot-test were utilized. The questions were
pilot tested on a real person and the appropriateness, of the total length of the questionnaire was
determined before it was used to generate responses from CAB. The *Cultural Group* of the CAB
generated the virtual patient responses to these selected questions. In the virtual simulation, the
virtual patient responses are pre-programmed; the CAB assisted in developing the responses that will be used during actualization of OVIS content. Additionally, in the cross-cultural experience stage, five clinical situations were created which will require the nursing students to make culturally competent decisions during the simulation.

**Feedback.** In this part of the OVIS, assessment of the learner’s performance and prompt feedback was designed using the educational group. The Leininger’s Sunrise Model was used as a guide for developing feedback (Leininger, 2011). The Sunrise Model identifies three modes of nursing decisions and actions for culturally competent care. These are cultural care preservation, cultural care accommodation, and cultural care restructuring (Andrews & Boyle, 2012). Learner performances will be evaluated in the simulation based on these three modes. In simulation experiences, ongoing assessment and feedback based on these modes will be given to students as they go through the simulation. When learners receive regular feedback about their performance, deeper learning occurs; additionally, a serious game environment can promote learning and motivation, provided it includes features that prompt learners to process actively the educational content (Erhel & Jamet, 2013). Building feedback into the simulation experiences can prove beneficial and effective in achieving educational learning outcomes.

**Self-reflection.** In the self-reflection stage, simulation-debriefing questions were designed. Self-debriefing is suggested as a strategy for effective debriefing and reflecting back on the simulation experience (Fanning & Gaba, 2007). In virtual simulations since expert feedback is given throughout the simulation, there is a need to self-reflect on personal experiences by the learners at the end of the simulation experience for deeper learning and understanding.
Simulation Case

Before building the content of OVIS- Puerto Rican case, it was important to determine the simulation case itself. It was important to determine the importance of the relevance and the significance of the case based on evidence and need. Since the Puerto Rican population has multiple health disparities, as presented in chapter 1 the initial thought was to have a simulation case with many health disparities. However, including all health disparities in one simulation case adds complexity to the case; it was felt important to focus on one relevant disease condition at a time. Developing an OVIS case focusing on one particular health disease at a time made the process of script development more feasible with achievable goals and also decreased complexity. For this study, the simulation case chosen was a 66-year-old Puerto Rican male with the diagnosis of diabetes; who was admitted to the hospital in a non-ketotic state of hyperglycemia, and was accompanied by a family member. The supporting evidence for this case includes the national diabetes statistics report (2014), which reports Puerto Ricans having the highest rate (14.8%) of diagnosed type 2 diabetes among Hispanics adults; the highest numbers were seen in 65 years or older (25.9%), and were highest in men (13.6%) (National Diabetes Statistics Report, 2014).

Community Advisory Board (Cultural Group)

Board structure. After contacting potential members individually, there were nine individuals from the community who showed interest in becoming an advisory board member. Each member was sent a personal invitation letter, inviting him or her to the board meeting. The cultural advisory board members consisted of 9 members both males and females of ages ranging
from young adults to older adults and included individuals born in Puerto Rico and born in the U.S. Mainland. They lived and worked across NYC and had diverse work experiences.

**Community setting.** After having an idea about preferences of the advisory board members, the researcher started to look for a central location for meetings in the community which would be convenient for the board members. There were three choices available regarding location to conduct board meetings: A boardroom type conference room at the Hispanic Counselling Center (HCC), a larger conference area at the Coordinated Agency for Spanish Americans (CASA) and a smaller conference room at a local church. The researcher preferred to use HCC boardroom as it was comfortable, had the multi-media capability and had the space to serve dinner. For this study, permission was obtained from the Chief Executive Officer (CEO) of HCC to use the boardroom for a monthly meeting in the evening post working hours. However, this location was used only for the first meeting as unexpectedly there was a change in leadership at HCC, having no longer permission to use the boardroom until the appointment of a new leadership. This event warranted a change of location for the future meeting at the second choice, which was CASA. The CEO of CASA approved the use of their conference room, and the same location was used for the rest of the advisory board meetings with the *cultural group*. Meetings were scheduled for 5 pm, when most of the members had finished work and were available. During the first meeting, future dates and times of the meetings were discussed and planned.

**Goals.** There were two goals to be met during the meetings with the *cultural group* of the advisory board. The first goal was to develop content for the cross-cultural knowledge part of the simulation case and the second was to develop content for the cross-cultural experience part of the simulation case. Both these goals were met. The researcher developed a PowerPoint
presentation based on many published resources on the common health care beliefs and practices of the Puerto Ricans. The community advisory board members reviewed each slide and critiqued and offered feedback. The researcher then modified the presentation. The researcher developed a cultural assessment presentation consisting of questions taken from the Purnell’s model, and these questions were the first pilot tested to determine appropriateness. The CAB members generated virtual patient responses to each question. Content developed for both the cross-cultural knowledge and the cross-cultural experiences part of the simulation is presented in chapter 4.

**Meeting and activities.** The meetings and activities of the cultural group are presented in Table 6 and are categorized as pre-, during and post-meeting activities.
<table>
<thead>
<tr>
<th>Pre-Meeting Activities</th>
<th>During Meeting Activities</th>
<th>Post-Meeting Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. First Meeting</td>
<td>- The researcher welcomed each member to the board.</td>
<td>- First meeting minutes were drafted.</td>
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<tr>
<td></td>
<td>- Each board member received personal folders that contained,</td>
<td>- The meeting evaluation data were analyzed quantitatively.</td>
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<tr>
<td></td>
<td>welcome letter, University of Arizona (U of A) authorization</td>
<td>- Three open-ended descriptive questions were analyzed qualitatively and were coded into themes.</td>
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<tr>
<td></td>
<td>and release form, a handout on health disparities, and advisory</td>
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<td></td>
<td>board meeting evaluation forms.</td>
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<td></td>
<td>- Each board member introduced themselves</td>
<td>- First meeting minutes were emailed to each member.</td>
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<tr>
<td></td>
<td>- Researcher presented the study and opened the board for discussion.</td>
<td>- Researcher followed up with each member including phone calls and emails and also met with few members as feasible to maintain an ongoing relationship.</td>
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<tr>
<td></td>
<td>- U of A authorization forms were obtained for photo/audio/video taping.</td>
<td>- Researcher also participated in community events (Fund Raising Event and Community Health Fair).</td>
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<tr>
<td></td>
<td>- Future Meeting dates and locations were discussed.</td>
<td>- In the community health fair event the researcher provided health screenings and health education on various topics.</td>
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<td></td>
<td>- Members evaluated the meeting using Questionnaire for CAB Process Evaluation</td>
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<td></td>
<td>- All members participated in the Dinner and interacted with one another.</td>
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<tr>
<td>Pre-Meeting Activities</td>
<td>During Meeting Activities</td>
<td>Post-Meeting Activities</td>
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<tr>
<td>2. Second Meeting</td>
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<tr>
<td>- Minutes from the first meeting were emailed to all members.</td>
<td>- The researcher welcomed each board member and thanked them for their participation.</td>
<td>- The minutes from the second meetings were drafted.</td>
</tr>
<tr>
<td>- Literature on Puerto Rican health disparities was emailed to all members</td>
<td>- First meeting minutes were reviewed by the members and were accepted with a minor correction in spelling error.</td>
<td>- The meeting evaluation data were analyzed to identify any specific areas of improvement.</td>
</tr>
<tr>
<td>- Second meeting location was emailed.</td>
<td>- Second meeting session was audiotaped with consent of all members.</td>
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<tr>
<td>- Dinner menu was planned, post-discussion with the board members.</td>
<td>- The first meeting evaluations were discussed.</td>
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<tr>
<td></td>
<td>- The researcher announced the meeting goal which was to critique a power point presentation on health care beliefs and practices of the Puerto Rican population.</td>
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<tr>
<td></td>
<td>- Each slide was reviewed by the board members and comments were made.</td>
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<td></td>
<td>- The researcher took notes on the comments made by the board members and gave opportunity for every board member to comment.</td>
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<td></td>
<td>- There were many discussions on generational differences, acculturation, cultural background and emerging roles of Puerto Rican women.</td>
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<td></td>
<td>- The board reviewed only first 16 slides.</td>
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<td></td>
<td>- All members reported that they enjoyed Peruvian Menu.</td>
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<td></td>
<td>- Next meeting date, time and place were discussed.</td>
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<td></td>
<td>- Members evaluated the second meeting.</td>
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</tbody>
</table>
### TABLE 6 – Continued

<table>
<thead>
<tr>
<th>Pre-Meeting Activities</th>
<th>During Meeting Activities</th>
<th>Post-Meeting Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Third Meeting</td>
<td>- The second meeting minutes were sent to all the board members.</td>
<td>- The third meeting minutes were drafted.</td>
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<tr>
<td></td>
<td>- Third Meeting Agenda was emailed.</td>
<td>- Meeting evaluations were analyzed qualitatively and quantitatively.</td>
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<td></td>
<td>- Board members received email notifications and reminders of the third meeting.</td>
<td>- Each presentation slides were updated as per CAB feedback.</td>
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<td></td>
<td>- Researcher welcomed all members and thanked them for their participation.</td>
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<td></td>
<td>- All members reviewed minutes from the second meeting.</td>
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<td></td>
<td>- Minutes were accepted with no further changes.</td>
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<td></td>
<td>- The researcher reviewed the goal, to continue critiquing on the common health care beliefs and practices of Puerto Ricans.</td>
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<td></td>
<td>- The researcher appointed a facilitator to keep time and to keep the board on target to accomplish the set-goal.</td>
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<td></td>
<td>- The board reviewed slides from 17 to 39.</td>
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<td>- There was much discussion on topics related to family roles, alternative lifestyles, workplace culture, food and dietary practices.</td>
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<td>4. Fourth Meeting</td>
<td>- The third meeting minutes were emailed to all members.</td>
<td>- Each member received an email with minutes.</td>
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<td></td>
<td>- The fourth meeting agenda was emailed.</td>
<td>- The evaluations were analyzed qualitatively and quantitatively.</td>
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<td></td>
<td>- Email notifications and reminders were sent regarding fourth meeting.</td>
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<td></td>
<td>- Meeting was chaired by the researcher.</td>
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<tr>
<td></td>
<td>- Researcher welcomed each member and thanked them for their contributions.</td>
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<td></td>
<td>- Minutes were shared from the third meeting.</td>
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<td></td>
<td>- CAB evaluation results were presented.</td>
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<td></td>
<td>- The main CAB activity was to develop virtual patient responses to the cultural assessment part of the simulation.</td>
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<td></td>
<td>- On screen inputting method was utilized and all members actively participated.</td>
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<td></td>
<td>- Meeting evaluations were obtained.</td>
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<td></td>
<td>- Dinner was served.</td>
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<tr>
<td></td>
<td>- Each member received a personal thank-you card and a gift card of $25 was presented based on their choice (Amazon or Cheese Cake Factory).</td>
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</table>

**Community Advisory Board (Clinical-Educational Group)**

**Board structure.** The board members consisted of total eleven members. The members were health professionals who included, nurses, nurse practitioners, nurse case managers,
nursing faculty, nursing students, and one public health faculty. They brought a wealth of knowledge and expertise from their experiences. Two nurses had masters in nursing with an average of 15 years of nursing experience, which included acute care and managed care. One nurse had a bachelor’s degree in nursing and was working in nursing research. Four nurses had doctoral degree in nursing; one had a doctorate of Nursing Practice (DNP) degree and is working in acute care setting in a hospital in NYC which serves a large Puerto Rican population. The other three nurses had their Ph.D. and held faculty positions. One faculty was a tenured associate professor at the City University of New York (CUNY) and had research experience working with the Hispanic population with multiple publications in her field of expertise. Additionally, she also has research engagement with the Center for Puerto Rican Studies in NYC. The other two nurses were faculty members at the University of Puerto Rico. One educator was non-nursing but was a tenured faculty in public health at CUNY, and is actively engaged in research with the Latino population and is also a researcher at the Center for Puerto Rican Studies in NYC. Three other members were nursing students from three different nursing programs in NYC and were using simulations in their nursing programs. They played a key role in connecting the cultural and the clinical practice component of the Puerto Rican population.

**Community setting.** The researcher communicated with all members the need for a central location, which would be convenient for all. The board members were very instrumental in using their workplaces with permission to use conference rooms. Two agencies used were, the New York Blood Center, a research facility and Veterans Affairs, a community hospital for the *clinical-educational group* to meet once a month. A few members worked in these facilities and were instrumental in obtaining permission to use the conference room for the board meeting.
Goals. The clinical-educational group of the CAB along with the researcher had two goals to meet. The first goal was to critique content for five clinical situations requiring culturally competent decision-making. The second goal was to develop feedback and scoring and rate the cross-cultural test items and debriefing questions, in the simulation case. To meet the first goal, the researcher developed five clinical situations needing culturally competent decisions as guided by Leininger’s Sunrise Model (Leininger, 2011). The clinical-educational group critiqued the clinical situations and offered feedback. Each member rated the clinical situation as acceptable, unacceptable, needs revision, and revisions suggested. Based upon their responses, the researcher made additional changes. The details of these clinical situations and member ratings are presented in chapter 4. For the second goal, the researcher developed seven multiple choice test items for testing cross-cultural knowledge in the simulation case. The seven items were critiqued by the board members, and each question was rated as acceptable, unacceptable, needs revision and suggestions for revision. Changes were based on the feedback received by the board members. The test items, the member ratings, and revised items are presented in Chapter 4. The researcher also developed four self-debriefing questions for the self-reflection part of the simulation case, which were rated by each member as acceptable, unacceptable, needs revision and suggestions for revisions. Based on the member feedback and ratings, the researcher revised the self-debriefing questions. These self-debriefing questions along with member ratings are also presented in chapter 4. The group also discussed the scoring process in the simulation case during the cultural assessment part of the simulation case and it is presented in Chapter 4.
**Meetings and activities.** The group meetings and activities which occurred with the clinical-educational group are presented in Table 7, and it contains pre, during and post activities.

**TABLE 7. Meeting and Activities of the Clinical-Educational Group.**

<table>
<thead>
<tr>
<th></th>
<th>Pre-Meeting Activities</th>
<th>During Meeting Activities</th>
<th>Post-Meeting Activities</th>
</tr>
</thead>
</table>
| 1. First Meeting | Personal invitations were emailed to each member inviting them to the board.  
- First meeting agenda was emailed to all members.  
- Location and conference room was booked.  
- Dinner was ordered  
- Email reminders were sent announcing the date, time and location of the first meeting. | The meeting was chaired by the researcher.  
- Researcher introduced herself and all members introduced themselves and shared about their professional role.  
- The researcher presented the study.  
- There were discussions about Puerto Ricans and health disparities.  
- U of A authorization and release form were completed.  
- Agenda and dates for future meeting were set  
- The operational process of CAB was explained  
- Permission for audio/video taping was obtained  
- Dinner was served, all members participated with a lot of interaction. | First meeting minutes were drafted.  
- The meeting evaluation data were analyzed quantitatively.  
- Three open-ended descriptive questions were analyzed qualitatively and were coded into themes.  
- First meeting minutes were emailed to each member.  
- The researcher kept in touch with members via emails and phone calls. |
| 2. Second Meeting | 5 clinical situations were emailed to the group members to review before the meeting.  
The agenda for the second meeting was emailed. | The meeting was chaired by the Researcher  
- Researcher briefly introduced herself and asked all members to give a brief introduction.  
- Researcher presented the evaluation findings from the first meeting.  
- Five clinical situations were reviewed and each situation was rated as accurate, inaccurate, needs revision and suggestions to edit.  
- Meeting was audio taped.  
- Dinner was served. | The minutes from the meeting were drafted.  
The meeting evaluation data were analyzed both qualitatively and quantitatively. |
TABLE 7 – Continued

<table>
<thead>
<tr>
<th></th>
<th>Pre-Meeting Activities</th>
<th>During Meeting Activities</th>
<th>Post-Meeting Activities</th>
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<tbody>
<tr>
<td>3.</td>
<td>Third Meeting</td>
<td>- The second meeting minutes were emailed to all the members.</td>
<td>The minutes from the third meeting were drafted and were emailed to the members.</td>
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<tr>
<td></td>
<td></td>
<td>- The agenda for the third meeting was emailed.</td>
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<tr>
<td></td>
<td></td>
<td>- Meeting was chaired by the researcher.</td>
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<td></td>
<td></td>
<td>- The researcher presented the evaluation findings from the second meeting.</td>
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<td>- Goals for the third meeting were explained.</td>
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<td>- The members suggested on scoring of 7 multiple choice item testing cross-cultural knowledge.</td>
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<td>- Each item was rated as Acceptable, Unacceptable, Needs revision (include suggestions for revision).</td>
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<td>- The members reviewed the cultural assessment script and suggested scoring of student performances.</td>
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<td>- The members also critiqued four self-debriefing questions and rated them as Acceptable, Unacceptable, or Needs revision (include suggestions for revision).</td>
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<td>- Notes from the meeting were taken.</td>
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<td>- Meeting was audio-taped</td>
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<td></td>
<td></td>
<td>- Dinner was served.</td>
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<td></td>
<td>- Each member received a thank-you card and a $25 Amazon gift card was given as a token of appreciation.</td>
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<td></td>
<td></td>
<td>- The researcher expressed the need to continue with the advisory board in the future.</td>
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</tbody>
</table>

**Roles in script development.** The CAB consisted of two groups: *cultural*, and the *clinical-educational*. Each group had specific goals to achieve towards the development of the simulation script guided by the CCSE framework. For details regarding the process of simulation
script development and the roles of each group, see Appendix A; the details of CAB and researcher roles in each stage of simulation are detailed there.

**Aim III: Evaluation of the Community Advisory Board Group Process**

**Evaluation of CAB Meeting Effectiveness**

For this study, both qualitative and quantitative methods were used to evaluate the effectiveness of the community advisory board. There was an ongoing, formative type of evaluation conducted at the end of each meeting. In CBPR studies, partnership effectiveness can be evaluated by knowing the extent to which groups reflect on how well they are functioning during the group process (Israel et al., 2013). In this study, the group process is script development for two important steps of the OVIS case. Both qualitative and quantitative types of evaluation were used to evaluate the group process.

**Qualitative Approach**

At the end of each cultural group session, the members were asked three open-ended questions, and anonymous responses were collected in writing (using paper and pencil). The three questions that were asked, based on recommendations of CBPR experts (Israel et al., 2013), were:

1. What was the most helpful aspect of this group session?
2. What was the least helpful aspect of this group session?
3. What should we do differently next time?

The open ended responses were content analyzed. Qualitative content analysis is a method of subjective interpretation of text data through systematic classification process of coding and identifying themes or patterns (Hsieh & Shannon, 2005). A code in qualitative inquiry is a word
or a short phrase which symbolically assigns a summative, salient, essence-capturing attribute to a language-based or visual data (Saldana, 2009). Emerged themes become a basic building block to inductive approaches to qualitative social science (Williams, 2008). After each meeting with the CAB, the researcher read and content analyzed the written responses to the three open-ended questions. The descriptive response sentences for each open-ended question were manually entered in a Microsoft Excel sheet. The researcher assigned a code, which was a short phrase based upon the response. After the codes were assigned to each written response of the CAB members, the researcher calculated the frequency of each coded response to determine the most frequently occurring response. The most frequently occurring response was interpreted as the opinion of the majority CAB members and was written as a major theme.

Examples of coding participant responses for the “most helpful aspect question” of the first CAB meeting with the cultural group included the following: member response “introduction to other members” was coded as BM (Board member introductions), “health issues with Puerto Ricans” was coded as PR (Puerto Rican health issues), “introduction to research” was coded as “SP” (Study presentation), “introduction to other volunteers” was coded as BM, “learning about other persons on the board” was coded as BM, “understanding Puerto Rican health issues” was coded as PR, “understanding cultural awareness” was coded as CA (cultural awareness), “meeting other people” was coded as BM, “introduction presentation” was coded as SP. After all the responses were assigned a code, frequency was calculated as coded. In this analysis SP was noted to be frequently occurring and upon calculation it was noted to be 53% of the total responses, therefore the major theme that emerged as the most helpful aspect of the first meeting was the presentation of the study.
This process enabled the researcher to identify if changes were needed to maintain the CAB. Calculating frequencies enabled the researcher to understand the opinion of the majority regarding the meetings and also enabled a graphical representation of qualitative data. The analysis findings were shared with the dissertation committee members post each meeting for their feedback and input. All themes that emerged out of content analysis of the three open ended question were shared with the CAB at the beginning of each meeting and changes were proposed as needed based on major themes as identified during content analysis. The group responses and findings are presented in Chapter 4 and changes made based on these findings are discussed in Chapter 5.

**Trustworthiness**

To assure rigor, the researcher independently coded all responses to the three open ended questions after every meeting with the CAB. The findings were discussed and verified with the CAB members at the beginning of each meeting to assure *credibility*, which is verification of findings from different viewpoints and for *dependability*, which is consistency of findings throughout the study (Lincoln & Guba, 1985). Also *confirmability*, which is member checks, *transferability*, which is application with samples and context, was maintained through discussion of findings with the members of the CAB (Crist, Parsons, Warner-Robbins, Mullins, & Espinosa, 2009). In this study, an audit trail is maintained, which is keeping of records from the start of a research project to the development and reporting of findings (Halpern’s 1983). These records include, the member evaluations to three-open ended questions, the rated questionnaires, meeting notes, audio tapes, meeting agenda, sign-in sheets, meeting minutes, video clips, and email communications with the CAB members.
Quantitative Approach

A brief questionnaire, based upon the Conceptual Framework for Understanding and Assessing the Effectiveness of the CBPR Partnerships (Israel et al., 2013), was modified and utilized in this study. This questionnaire was used to evaluate the CAB meeting effectiveness with the cultural group members. Information gathered regarding group dimensions included: trust among members, demonstration of respect among members, communication among members, maintenance of confidentiality, member engagement, the decision-making process, the acknowledgment of conflict, and individual personal contribution (Israel et al., 2013). A Likert scale was developed to evaluate the effectiveness of the meetings using these group dimensions, and numerical values were assigned for quantitative analysis. This anonymous questionnaire was given in paper and pencil form at the end of each session. Members were asked to voluntarily complete the questionnaire at the end of each meeting. The data analysis included descriptive statistics, which included; frequency, distributions and comparison of means. The results were graphically presented and the findings were shared at the beginning of each meeting.
### TABLE 8. Questionnaire for CAB Process Evaluation.

<table>
<thead>
<tr>
<th>Items</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you think there was trust evident among the group members?</td>
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<tr>
<td>2. Do you think there was mutual respect evident among the group members?</td>
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<td>3. Do you think that there was effective communication among the group members?</td>
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<td>4. Do you think that confidentiality was maintained during the group process?</td>
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<td>5. Do you think group members were actively engaged during the group process?</td>
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<td>6. Do you think all group members were involved during the decision-making?</td>
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<td>7. Do you think conflicts if any were addressed appropriately?</td>
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<tr>
<td>8. Do you think you were able to personally contribute to the group study?</td>
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</tbody>
</table>

### Research Ethics

Before conducting the study, an Institutional Review Board (IRB) application was completed. To determine if this study may qualify as a non-human research, the “F309: Human Research Determination” form was completed. The study was approved as a non-human research study. Privacy and confidentiality of information was maintained during the study. Each participant was advised that some emotional discomfort may occur if they recall a difficult event from their present or past. There was no situation where a board member expressed emotional discomfort. Written communication of research activities occurred via email and was done through official University of Arizona email accounts. All community participants agreed by
responding to the invitation to join the CAB. The CAB members were informed of the study progress, and their significant contributions were acknowledged on an ongoing basis. Privacy was maintained during the CAB meetings; all information gathered was kept confidential.

**Privacy**

The community advisory board met in an enclosed conference room. The conference room had a door with a locking capability. The researcher ensured that all windows were covered with blinds or non-transparent curtains. The meetings were held in a conference room when there was no other activity occurring. Since the meetings occurred in the evenings after the normal working hours, the surrounding areas were mostly quiet. However, on one occasion, the meeting was interrupted by security due to some disruptions occurring in the street.

**Confidentiality**

The identity of the CAB members was kept confidential. No personal information was obtained. The only information that was obtained was their contact information, like phone number and email address, primarily for communications. During member introductions the members shared personal information regarding their family and work. All activities that took place during the CAB meetings were kept confidential and no discussions occurred outside of the meetings. There were no conflicts noted during the meetings. There was no identifiable information obtained in the evaluation forms. All evaluation forms (paper and pencil) were anonymous.

**Data Storage**

A copy of electronic documents, including the audio and video files, was saved on an encrypted, password-protected USB flash drive and was kept in a locked cabinet during the
process of the study. After the initial phase of the study, the audio/video files of CAB meetings will be permanently deleted. As per the University of Arizona policy, the data must be kept for six years. The evaluation paper pencil forms will be stored in a locked cabinet in the researcher’s office until the conclusion of the initial phase of the study. After conclusion of this study, the evaluation sheets will be shredded. The University of Arizona email account was used for all communications between the researcher and the CAB members. To disseminate the information gained from this study, a derivation of a manuscript from this dissertation is imperative. The disseminated information can serve as a guide to replicate the study, and for developing future simulations for cultural competency in caring for vulnerable populations.
CHAPTER 4: FINDINGS AND RESULTS

This chapter contains detailed information regarding findings and results of this study and is organized using the three main aims of this study. It contains the details of OVIS content that were developed during this study using a CBPR approach and also qualitative and quantitative findings from the evaluation of group process.

**Aim I: Developing a Community Advisory Board**

The first aim of this study was to develop a Community Advisory Board consisting of Puerto Rican community members, health care professionals and nurse educators. This aim was met, and a community advisory board was developed using a reputational method of recruitment (Israel et al., 2013). The process used in developing the advisory board, the contributions and participation of board members in developing the content of the OVIS are discussed in chapter 3. In this section, the knowledge gained from the formation, operation and maintenance process of the CAB is discussed.

**Formation Process**

It is important for a researcher to engage with the vulnerable populations of interest to form an advisory board (Israel et al., 2013). Some ways researchers can engage with a community are through joined collaborations (Israel et al., 2013). The initial contact for this study was an influential individual from the Puerto Rican community who the researcher had engaged with for a medical mission abroad study unrelated to this study. The researcher participated in community events that were related to the organizations (HCC and CASA) that were involved in this study. Some events included a fund raising activity, a community empowerment for girls and women event, and mother’s day celebration at CASA. The researcher
participated and offered health screening along with her nursing students in one of the events. The researcher also spent time in building a relationship with each member by having lunches in the community and discussing the research topic and the impact it would make in the community. The researcher got engaged with the National Association of Hispanic Nurses (NAHN), by taking membership, attending monthly chapter meetings, and introducing nursing students to the New York City (NYC) chapter. Such engagements enabled the researcher to be visible in the Hispanic/Latino community of interest and created opportunities to meet with potential advisory board members. Such engagements proved very beneficial in the formation of the community advisory board for this study.

**Operational Process**

Once the community board was established, the researcher kept in touch with the members using emails and phone calls. The researcher also met with members during the periods between the meetings over lunches in the community. The researcher sent frequent reminders via emails reminding them of future meeting dates and locations. During each meeting the researcher served dinner based on the member’s choice of menu. It was during the dinner time where the board members had much interaction with each other, which created a friendly open environment for discussions. Some members preferred to eat during meetings as they stated that they were hungry after work and some waited till the end. The researcher was flexible with the board members and allowed them to eat during the meeting, as they wished. During each meeting the researcher acknowledged and appreciated their participation and contributions.
Maintenance Process

In order to maintain the board, it was important to evaluate and obtain feedback at the end of each meeting, regarding the meeting itself. At the end of each meeting the members who were physically present evaluated the meeting using the evaluation form. This gave each member an opportunity to share their opinions about the meetings, and recommend changes for improvements. Based on each meeting’s evaluations, changes were implemented in the next meeting. These changes are presented in the Aim III section of this chapter.

Aim II: Development of the OVIS Content

Development of Cross-Cultural Knowledge

It is important to have the opportunity to learn and develop knowledge regarding common Puerto Rican cultural health beliefs and practices prior to engaging with a Puerto Rican patient. Therefore, in the OVIS, all nursing students will have the opportunity to develop cross-cultural knowledge regarding Puerto Rican cultural health beliefs and practices using a narrated screen cast video. The first step in developing this video was to develop the content. Therefore, the researcher started with first developing a power point presentation regarding common Puerto Rican cultural health beliefs and practices using established resources (Center for Disease Control and Prevention, 2008; CIA, 2015; Motel & Patten, 2010, National Alliance for Hispanic Health, 2011; National Center for Health Statistics, 2011; Orshan, 1996; Purnell, 2013; U.S. Census Bureau, 2009). After developing that, the presentation was shown to the cultural group of the advisory board, and they had the opportunity to critique each slide of the presentation. Post-critique, the researcher made changes to each slide incorporating advice received form the board. The next step for the researcher was to develop seven multiple choice items that would
test the knowledge of the students post video view in the simulation case. The researcher showed both the PowerPoint presentation and the seven test items to the clinical-educational group; they further critiqued each item and rated the multiple choice questions. One of the member of the advisory board also provided pictures from Puerto Rico, which were added to the presentation.

The power-point presentation is attached in the appendix section B. However, Table 8 presents each slide with the content developed regarding common health care beliefs and practices of Puerto Ricans.

**TABLE 9. Common Puerto Rican Cultural Health Beliefs and Practices Content.**

<table>
<thead>
<tr>
<th>Slide Number</th>
<th>Topics</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Cover Slide</td>
<td>Common health beliefs and practices of Puerto Ricans</td>
</tr>
<tr>
<td>2.</td>
<td>Overview</td>
<td>• The island of Puerto Rico is located between the Caribbean Sea and the North Atlantic Ocean.</td>
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<tr>
<td></td>
<td></td>
<td>• San Juan is the capital and is the biggest Caribbean harbor.</td>
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<tr>
<td></td>
<td></td>
<td>• Puerto Rico was ceded to the United States as a result of Spanish-American war in 1898.</td>
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<td>• Puerto Ricans were granted U.S. citizenship in 1917 through the Jones Act.</td>
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<td>• In 1952, Puerto Rico became a commonwealth (CIA World Fact Book, 2011)</td>
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<tr>
<td>3.</td>
<td>Population</td>
<td>• Puerto Ricans are the nation’s second largest Hispanic origin group, over 3 million living in the continental U.S. mainland.</td>
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<td></td>
<td></td>
<td>• New York City contains the largest Puerto Rican population (298,921 in Bronx County NY) (Motel &amp; Patten, 2012)</td>
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<tr>
<td>4.</td>
<td>Puerto Ricans (Groups)</td>
<td>• Puerto Ricans self-identify as :</td>
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<tr>
<td></td>
<td></td>
<td>• Puertorriqueños.</td>
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<tr>
<td></td>
<td></td>
<td>• Boricuas (Tiano Indian)</td>
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<tr>
<td></td>
<td></td>
<td>• Niuyoricans (Born in New York) (Purnell, 2013)</td>
</tr>
<tr>
<td>5.</td>
<td>Income in U.S. Mainland</td>
<td>• The mean annual income for Puerto Ricans was $16,000 compared with the overall income of $47,400 in 2010 (CIA World Fact, 2011)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The percentage of Puerto Rican families living below the poverty line is greater than other Hispanic/Latino populations in the U.S. (National Center for Health Statistics, 2011)</td>
</tr>
<tr>
<td>6.</td>
<td>Immigration</td>
<td>Puerto Ricans migrate to the mainland U.S. for decades for the following reasons:</td>
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<tr>
<td></td>
<td></td>
<td>• Seek Employment</td>
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<tr>
<td></td>
<td></td>
<td>• Education</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Better quality of life</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• To escape increased sales tax (11.5%) (The Associated Press, 2015)</td>
</tr>
</tbody>
</table>
TABLE 9 – Continued

<table>
<thead>
<tr>
<th>Slide Number</th>
<th>Topics</th>
<th>Content</th>
</tr>
</thead>
</table>
| 7.           | Educational Status (U.S. Mainland) | • Puerto Ricans have 94% literacy rate in Puerto Rico  
• Puerto Ricans have a high secondary school drop rates in U.S. mainland (National Center for Health Statistics, 2011)  
• High School Completion rates are only 76.6% and college degree is held by only 16.5% (U.S. Census Bureau, 2009). |
| 8.           | Communication | • Migrant Puerto Rican population: Spanish is the Primary Language.  
• U.S. born Puerto Rican population: English is the primary language. |
| 9.           | Cultural Communication Pattern | • Value interpersonal interaction  
• Simpatico: Is a cultural script in which individuals is perceived as likeable, attractive and fun-loving  
• Enjoy conversing with friends and sharing information about their families, heritage, thoughts and feelings  
• Personalismo: Personal relationships are valued over impersonal and bureaucratic relationships. |
| 10.          | Cultural Communication Pattern | • Openly express physical ailments and discomforts except issues related to taboo topics like sexuality.  
• Confianza: Trust should be established using open communication with individuals and family  
• Personal space may be an issue. Example: Older women may prefer greater distance from men.  
• U.S. born Puerto Ricans are less self-conscious regarding personal space. |
| 11.          | Cultural Communication Pattern | • Very expressive, use many body movements.  
• Feelings and emotions are expressed through touch  
• Are Cariñoso, which is loving and caring in verbal and non-verbal ways  
• Greeting with a gentle hug is seen in a trustful relationship.  
• During conversations a gentle hand stroke on the shoulder, may sign love and affection |
| 12.          | Cultural Communication Pattern | • Puerto Rican women may greet with a strong hug and a cheek kiss.  
• Non-verbal communication may include a head nod with “ahah” response.  
• Also chin lift may be used to point towards a particular individual.  
• May prefer to read or share sensitive information regarding health, options and decisions with family members  
• Verbal approval from extended family or community members who are knowledgeable in health may be obtained. |
| 13.          | Cultural Communication Pattern | • Discussions on topic related to sex, sexual orientation, and sexually transmitted infections, should be built around confianza and personalismo.  
• When discussing sensitive issues, variables like voice volume, tone, eye contact, spatial distancing and time are important. |
| 14.          | Name Formats | • It is crucial to demonstrate respect in communication  
• Señor and Señora for adults  
• Titi or Tio for aunts and uncles  
• Madrina and Padrino for godmother and godfather  
• Usted, Don, Doña.  
• Nicknames: Papa, junior, tio etc. |
TABLE 9  – Continued

<table>
<thead>
<tr>
<th>Slide Number</th>
<th>Topics</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Puerto Rican Women</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Organizations</strong></td>
<td>• Traditionally women were expected to be of a submissive nature, man pleaser, respectful and obedient.</td>
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<tr>
<td></td>
<td></td>
<td>• Women currently play a central role in the family and community. They are independent, self-sufficient and may serve as a primary provider for the family.</td>
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<td></td>
<td></td>
<td>• Puerto Rican women now join politics and are increasingly active in the workforce.</td>
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<tr>
<td>16.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Puerto Rican Men:</strong></td>
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<tr>
<td></td>
<td><strong>Organizations</strong></td>
<td>• Traditionally Machismo, a sense of masculinity and display of physical strength and bravery was expected.</td>
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<td></td>
<td></td>
<td>• Men were expected to play a dominating role.</td>
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<td>• With emerging role of women having equality with men, a dominating role is diminishing.</td>
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<tr>
<td>17.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Children &amp; Adolescence</strong></td>
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<tr>
<td></td>
<td><strong>Organizations</strong></td>
<td>• Familism, which is respecting the elders, is emphasized.</td>
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<td></td>
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<td>• Children are expected not to contradict, argue or disagree with their parents.</td>
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<td></td>
<td></td>
<td>• U.S. born adolescents seek independence and struggle between the traditional and contemporary family values</td>
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<td></td>
<td></td>
<td>• Teen pregnancy, substance abuse, delinquent behaviors, depression have been associated with cultural conflicts.</td>
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<td>(National Coalition of Hispanic Health and Human Service Organizations, 1999)</td>
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<tr>
<td>18.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Children &amp; Adolescents</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Organizations</strong></td>
<td>• Many families believe that a healthy child is one who is gordita or llenito (overweight) and may be perceived as evident of physical and financial wealth.</td>
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<td></td>
<td></td>
<td>• Young mothers are encouraged to add cereal, egg and viandas (starchy tropical root) in their infant milk bottles.</td>
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<td>19.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Children &amp; Adolescence</strong></td>
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<tr>
<td></td>
<td><strong>Organizations</strong></td>
<td>• Some families abide by cultural prescriptions that encourage sexual activity before marriage (tener relaciones), extra marital sexual activity and men to have control over sexual relationships (Orshan 1996).</td>
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<td></td>
<td></td>
<td>• Traditionally girls were socialized to be modest, respectful and submissive to men (marianismo).</td>
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<td>• With acculturation girls are more assertive, independent and outspoken.</td>
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<td></td>
<td></td>
<td>• Issues of menstruation, birth control, impotence, sexually transmitted infections and infertility are rarely discussed.</td>
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<td>20.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Children &amp; Adolescents</strong></td>
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<tr>
<td></td>
<td><strong>Organizations</strong></td>
<td>• Less educated families may have difficulty educating women about sexuality and reproductive issue.</td>
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<td>• Most families expect children to stay home until marriage.</td>
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<td>• The mother is expected to assume an active role in disciplining, guiding and advising children</td>
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<td>Fathers are expected to be consulted in all family matters and serve as financial providers.</td>
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</tbody>
</table>
### TABLE 9 – Continued

<table>
<thead>
<tr>
<th>Slide Number</th>
<th>Topics</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Children &amp; Adolescence</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Organizations</strong></td>
<td>• Puerto Rican families are rigorous with their children’s discipline</td>
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<tr>
<td></td>
<td></td>
<td>Traditional punishment practices include:</td>
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<td></td>
<td>• Making a child who has lied to kneel on rice until the truth is told.</td>
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<td></td>
<td></td>
<td>• Washing the mouth vigorously with soap for using profanity.</td>
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<td></td>
<td></td>
<td>• Spanking the buttocks or lower extremity with belt.</td>
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<tr>
<td></td>
<td></td>
<td>Also threats to punishment, guilt, and discipline create stress for</td>
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<tr>
<td></td>
<td></td>
<td>adolescents as they deal with more permissive cultural patterns in the</td>
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<td></td>
<td></td>
<td>United States.</td>
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<tr>
<td>22.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Priorities</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Priorities</strong></td>
<td>• Family unity is highly valued</td>
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<tr>
<td></td>
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<td>• Family structure can be nuclear or extended</td>
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<td></td>
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<td>• Children post marriage are expected to maintain very close ties with</td>
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<tr>
<td></td>
<td></td>
<td>their families</td>
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<tr>
<td></td>
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<td>• Daughters are preferred as caretakers when parents are aged.</td>
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<td></td>
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<td>• Close and extended family members are expected to participate in the</td>
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<td>care of their children</td>
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<tr>
<td></td>
<td></td>
<td>• Grandparents play an active role in raising grandchildren</td>
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<tr>
<td>23.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Priorities</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Priorities</strong></td>
<td>• Older women gain increased status, have covert power over spouses,</td>
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<td></td>
<td></td>
<td>children and family</td>
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<tr>
<td></td>
<td></td>
<td>• Dependent older adults live with their children and are cared for</td>
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<td></td>
<td></td>
<td>emotionally and financially</td>
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<td></td>
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<td>• Placements in nursing homes and extended care facilities may be seen</td>
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<tr>
<td></td>
<td></td>
<td>as inconsiderate of older people</td>
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<td></td>
<td></td>
<td>• Families that use such organizations may feel guilty and experience</td>
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<tr>
<td></td>
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<td>depression and distress</td>
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<td></td>
<td></td>
<td>• Health care professionals should be sensitive to these issues and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>explore alternatives</td>
</tr>
<tr>
<td>24.</td>
<td><strong>Family Roles and</strong></td>
<td><strong>Priorities</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Priorities</strong></td>
<td>• Family, friends and neighbors are expected to visit during</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hospitalizations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A family member is culturally expected to be present at the bedside of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a sick person</td>
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<tr>
<td></td>
<td></td>
<td>• Health care providers should ask the name of the family spokesperson</td>
</tr>
<tr>
<td></td>
<td></td>
<td>and document it in the patient chart.</td>
</tr>
<tr>
<td>25.</td>
<td>Alternate Lifestyle</td>
<td>• Since early 1980’s Puerto Rican families have experienced an increased</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rate of pregnancy among teenagers and unmarried women (Purnell, 2013)</td>
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<td></td>
<td></td>
<td>• There is an increase of women in labor force, high divorce rates,</td>
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<td></td>
<td></td>
<td>increase in poverty and increase in number of households headed by</td>
</tr>
<tr>
<td></td>
<td></td>
<td>women</td>
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<tr>
<td></td>
<td></td>
<td>• Homosexuality is considered a taboo and carries a great stigma, often</td>
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<tr>
<td></td>
<td></td>
<td>is undisclosed to avoid family rejection and preserve family links and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>support.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• With acculturation the trend is changing towards more acceptance of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>homosexuality in the Puerto Rican culture.</td>
</tr>
<tr>
<td>26.</td>
<td>Workplace Culture</td>
<td>• In general man and women adjust to the U.S. work environment due to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>similarities with the Puerto Rico.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Puerto Ricans are considered hard-working, like to be competitive, and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>make extended efforts to please their employers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Puerto Ricans place a high value on their occupations, positions and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>businesses and strive for higher performances even in the face of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>oppression.</td>
</tr>
<tr>
<td>Slide Number</td>
<td>Topics</td>
<td>Content</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 27.         | Workplace Culture       | • Most Puerto Ricans are hard-working and value personal relationships at work.  
• Work is perceived as a place of social and cultural interactions  
• For many women, family responsibilities, pregnancy and health of their children take priority over work. |
| 28.         | Biocultural Ecology     | • The Puerto Ricans are a mixture of Native Indians, Africans, and Spanish heritage  
• Diseases such as hypertension and diabetes are major illnesses both in Puerto Rico and the U.S. Mainland (Purnell, 2013). |
| 29.         | Diseases and Health Conditions | • The leading cause of death is heart disease, malignant neoplasm, diabetes mellitus and AIDS (National Alliance of Hispanic Health, 2011).  
• In the U.S. mainland, there is high incidence of chronic conditions such as mental illness among young adults; cardiopulmonary and osteo-muscular disease among the elderly.  
• Among the women high incidence of obesity increases the risk of mortality due to diabetes. |
| 30.         | High Risk Behaviors     | • Alcoholism, smoking, illicit drug use, physical inactivity, poor dietary practices, sex-related behaviors, and underutilization of preventive health-care services.  
• Alcoholism is a precursor of increased unintentional injuries, family disruption, spousal abuse, and mental illness among Puerto Rican families (Center for Disease Control, 2008). |
| 31.         | Nutrition               | • Puerto Ricans celebrate, mourn and socialize around food.  
• Food is used to honor, recognize visitors, friends and family members. |
| 32.         | Common Food Practices   | **Breakfast**  
• Coffee with milk  
• Hot cereal (oatmeal)  
• Cornmeal  
• Rice cereal cooked with vanilla, cinnamon sugar, salt and milk  
• Farina  
• Bread and butter  
• Fresh bread loaf.  
• Sandwich with butter, ham, and cheese |
| 33.         | Common Food Practices   | **Lunch & Dinner**  
• Rice and stew  
• Rice & Beans (pink, large red, white and pinto).  
• Rice with vegetables  
• Pork meat  
• Arroz guisado (rice stew), seasoned with sofrito (blend of spices like cilantro, onions, green peppers)  
• Rice can be cooked with chicken, pork, codfish, calamari or shrimp  
• Corn with several types of beans |
<table>
<thead>
<tr>
<th>Slide Number</th>
<th>Topics</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.</td>
<td>Common Food Practices</td>
<td><strong>Holiday Specials</strong>&lt;br&gt;• Rice with gandules, pernil asado (roasted pork) and pasteles made with root vegetables, green plantain, bananas or condiments filled with meat and wrapped with plantain leaves&lt;br&gt;• Variety of pastas, bread, crackers, vegetables and fruits&lt;br&gt;• Tostones, fried green or ripe plantains and a favorite side dish&lt;br&gt;• Most common viandas (roots) eaten with Cod fish, celery roots, sweet potatoes, dasheens, yams, breadfruit, breadnut, green and ripe plantains, green bananas, tanniers, cassava and chayote&lt;br&gt;• Alcupurria (Yuca with ground beef inside).</td>
</tr>
<tr>
<td>35.</td>
<td>Death Rituals</td>
<td>• Body is considered sacred and guarded with respect&lt;br&gt;• Death rituals are based on religious beliefs&lt;br&gt;• Burial rituals extend until all close family members are present&lt;br&gt;• A person close to the deceased person can organize funeral arrangements. It can be a family, friend or neighbor&lt;br&gt;• Family members visit the family for several days and weeks to support the mourning family and talk about the deceased&lt;br&gt;• Grief is expressed freely with loud cry&lt;br&gt;• There may be celebration of the deceased person, in the form of party, drinking, playing Dominos, Briscas (card game), serving hot chocolate with bread and speaking about the person.</td>
</tr>
<tr>
<td>36.</td>
<td>Spirituality</td>
<td>• About 85% of Puerto Ricans are Catholics and remaining are evangelicals/protestants&lt;br&gt;• Few practice Espiritismo (a blend of native Indians, Catholic, and African beliefs), communication with spirits and evil forces&lt;br&gt;• Espiritistas, Santeria are individuals capable of communicating with spirits for promoting spiritual wellness and to treat mental illnesses.</td>
</tr>
<tr>
<td>37.</td>
<td>Health Care Practices</td>
<td>• Have a curative view of health and underuse preventative services&lt;br&gt;• Natural herbs, teas, over-the-counter medications are often used as initial interventions for symptoms&lt;br&gt;• Many consult family and friends before consulting health-care provider&lt;br&gt;• Organ donation may be seen as a good act&lt;br&gt;• Autopsy is seen as violation.</td>
</tr>
</tbody>
</table>

**Testing and scoring of cross-cultural knowledge.** Post-viewing of a video presentation on the common cultural beliefs and practices of Puerto Ricans, the participants (nursing students) will answer seven multiple-choice questions that test their knowledge. The researcher developed seven multiple choice items based on the content presented on common cultural health beliefs and practices of Puerto Ricans. The test developer is responsible to set forth interpretation and intended use of the test items (Haladya, 2011). The objective of the multiple choice question is
to test recall knowledge post video view on common health care beliefs and practices of Puerto Ricans. Multiple-choice items are objectively scored; therefore, it makes computerized scoring possible with instant feedback to the students in the form of numerical scoring (Burton, Sudweeks, Merrill, & Wood, 1991). There was no evidence found that suggests most effective scores on each item during simulation. The scoring in this study was determined in collaboration with the clinical-educational group. The feedback mode in the OIVS is designed to give learners direct feedback after every action to inform them whether their action was correct or incorrect. Providing continuous feedback supports learners to process content more effectively (Vollmeyer & Rheinberg, 2005). Because OVIS Puerto Rican case is a first pilot, it was felt feasible to start with lesser test items to decrease complexity. The items written by the researcher were reviewed by the cultural-educational group and were rated. Presented here in Table 9 are the multiple choice items, the rating and the revised items. Based on the member feedback and ratings, two items # 3 and # 6 were revised.
<table>
<thead>
<tr>
<th>Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1.</td>
<td>Puerto Ricans who self-identify themselves as Nuyorican’s are best described as which one of the following?</td>
<td>A. They are born in Puerto Rico</td>
<td>A. They are born in Puerto Rico</td>
<td>B. They are born in New York (10 Points)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. They are born in New York</td>
<td>B. They are born in New York</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. They are of Indian descent</td>
<td>C. They are of Indian descent</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. They are of African descent</td>
<td>D. They are of African descent</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2.</td>
<td>Puerto Ricans migrate to the United States mainland mainly due to which of the following reasons?</td>
<td>A. Seek Employment</td>
<td>A. Seek Employment</td>
<td>D. All of the above (10 Points)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Better Education</td>
<td>B. Better Education</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Better Quality of Life</td>
<td>C. Better Quality of Life</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. All of the above</td>
<td>D. All of the above</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3.</td>
<td>Which one of the following is a cultural script in which individuals is perceived as likeable, attractive and fun loving in the Puerto Rican culture?</td>
<td>A. Personalismo</td>
<td>A. Personalismo</td>
<td>B. Sympatia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Sympatia</td>
<td>B. Sympatia</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Confianza</td>
<td>C. Confianza</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. Carinosos</td>
<td>D. Carinosos</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ratings</th>
<th>Acceptable</th>
<th>Unacceptable</th>
<th>Needs Revision</th>
<th>Suggestions for Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 Members</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3.</td>
<td>Which one of the following is a cultural script in which individuals is perceived as likeable, and fun-loving in the Puerto Rican culture?</td>
<td>A. Personalismo</td>
<td>A. Personalismo</td>
<td>B. Sympatico (10 Points)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Sympatico</td>
<td>B. Sympatico</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Confianza</td>
<td>C. Confianza</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. Carinosos</td>
<td>D. Carinosos</td>
<td></td>
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<thead>
<tr>
<th>Ratings</th>
<th>Acceptable</th>
<th>Unacceptable</th>
<th>Needs Revision</th>
<th>Suggestions for Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Member</td>
<td>None</td>
<td>5 Members</td>
<td>1. Simpatico/A both are correct answers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2. Should be Simpatico</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Simpatico, take out “attractive”</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Simpetic</td>
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</table>

<table>
<thead>
<tr>
<th>Revised Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q3.</td>
<td>Which one of the following is a cultural script in which individuals is perceived as likeable, and fun-loving in the Puerto Rican culture?</td>
<td>A. Personalismo</td>
<td>A. Personalismo</td>
<td>B. Sympatico (10 Points)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Sympatico</td>
<td>B. Sympatico</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Confianza</td>
<td>C. Confianza</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. Carinosos</td>
<td>D. Carinosos</td>
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</table>
### TABLE 10 – Continued

<table>
<thead>
<tr>
<th>Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
</table>
| Q4. | In which one of the following cultural values are personal relationships valued over impersonal and bureaucratic relationships? | A. Personalismo  
B. Sympatico  
C. Confianza  
D. Cariñosos | B. Sympatico  
C. Confianza  
D. Cariñosos | A. Personalismo (10 points) |

<table>
<thead>
<tr>
<th>Ratings</th>
<th>Acceptable</th>
<th>Unacceptable</th>
<th>Needs Revision</th>
<th>Suggestions for Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Members</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
</table>
| Q5. | Which action by the nurse demonstrates cultural care accommodation when a Puerto Rican patient is admitted to the hospital? | A. Restrict the amount of visitors per shift  
B. Emphasize patient to eat only hospital food.  
C. Allow family members to stay with the patient.  
D. Place the patient in a private room. | A. Restrict the amount of visitors per shift  
B. Emphasize patient to eat only hospital food.  
D. Place the patient in a private room.  
C. Allow family members to stay with the patient. (10 Points) | |

<table>
<thead>
<tr>
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<th>Acceptable</th>
<th>Unacceptable</th>
<th>Needs Revision</th>
<th>Suggestions for Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Members</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</table>

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<thead>
<tr>
<th>Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
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</thead>
</table>
| Q6. | Which action by the nurse demonstrates cultural care preservation when caring for a Puerto Rican patient? | A. The nurse allows the patient to consult Espiritistas for healing.  
B. The nurse restricts the patient from the use of natural herbs during hospitalization  
C. The nurse explains that the patient can resume hot and cold food practices after discharge  
D. The nurse verifies patient identification using patient’s preferred name. | B. The nurse restricts the patient from the use of natural herbs during hospitalization  
C. The nurse explains that the patient can resume hot and cold food practices after discharge  
D. The nurse verifies patient identification using patients preferred name.  
A. The nurse allows the patient to consult Espiritistas for healing. | |

<table>
<thead>
<tr>
<th>Ratings</th>
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<th>Unacceptable</th>
<th>Needs Revision</th>
<th>Suggestions for Revision</th>
</tr>
</thead>
</table>
| 1 Member | None | 5 Members | - religious affiliation  
- base response on religious practices  
- something religious for example: Rosary |
TABLE 10 – Continued

<table>
<thead>
<tr>
<th>Revised Question</th>
<th>Stem</th>
<th>Alternatives</th>
<th>Distractors</th>
<th>Correct Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q6.</td>
<td>Which action by the nurse demonstrates cultural care preservation when caring for a Puerto Rican patient?</td>
<td>A. The nurse allows the patient to hold rosary for prayers.</td>
<td>B. The nurse restricts the patient to use natural herbs during hospitalization</td>
<td>A. The nurse allows the patient to hold rosary for prayers. (10 Points)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. The nurse restricts the patient to use natural herbs during hospitalization</td>
<td>C. The nurse explains that the patient can resume dietary practices after discharge</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. The nurse explains that the patient can resume dietary practices after discharge</td>
<td>D. The nurse verifies patient identification using patients preferred name.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>D. The nurse verifies patient identification using patients preferred name.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7.</td>
<td>Which of the following are considered as high-risk health behaviors among the Puerto Rican population?</td>
<td>A. Alcoholism</td>
<td>A. Alcoholism</td>
<td>D. All of the above. (10 Points)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>B. Smoking</td>
<td>B. Smoking</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Physical inactivity</td>
<td>C. Physical inactivity</td>
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<tr>
<td></td>
<td></td>
<td>D. All of the above</td>
<td>D. All of the above</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ratings</th>
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</tr>
</thead>
<tbody>
<tr>
<td>6 Members</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Development of Cross-Cultural Experiences

**Cultural assessment.** In this stage of simulation the participants will have the opportunity to complete a cross-cultural assessment of the Puerto Rican patient. The cross-cultural assessment questions were derived from Purnell’s model (Purnell, 2013) and the virtual patient responses were developed by the *cultural group* of the advisory board. The *clinical-educational* group reviewed the cultural assessment script and determined the scoring framework. Table 10 consists of the revised version of the script in which the feedback received during CAB meetings is incorporated and also includes the scoring framework. The script consists of dialogue between the nurse, the patient and his wife during the skill of performing the cultural assessment.
TABLE 11. Cultural Assessment Script.

<table>
<thead>
<tr>
<th>Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 66-year-old Nuyorican male, Mr. Pedro Jimenez (Mr. PJ) who has a</td>
</tr>
<tr>
<td>history of type 2 diabetes is admitted to the hospital with</td>
</tr>
<tr>
<td>hyperglycemia and is recovering from a non-ketotic coma and is</td>
</tr>
<tr>
<td>accompanied by his wife.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultural Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Nurse: What is your cultural heritage?</td>
</tr>
<tr>
<td>Mr. PJ: Puerto Rican</td>
</tr>
<tr>
<td>2. Nurse: Does your cultural heritage influence your current beliefs</td>
</tr>
<tr>
<td>and values about health and illness?</td>
</tr>
<tr>
<td>Mr. PJ: Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Nurse: What is your dominant language?</td>
</tr>
<tr>
<td>Mr. PJ: I am Bilingual Spanish &amp; English</td>
</tr>
<tr>
<td>4. Nurse: What other language do you speak?</td>
</tr>
<tr>
<td>Mr. PJ: None</td>
</tr>
<tr>
<td>5. Nurse: How willing are you to share personal information about</td>
</tr>
<tr>
<td>yourself?</td>
</tr>
<tr>
<td>Mr. PJ: Not too much</td>
</tr>
<tr>
<td>6. Nurse: Is it Ok to touch on the arm or shoulder by others?</td>
</tr>
<tr>
<td>Mr. PJ: I am comfortable</td>
</tr>
<tr>
<td>7. Nurse: What are your spatial distancing practices? Space</td>
</tr>
<tr>
<td>preferences? Distance to be maintained?</td>
</tr>
<tr>
<td>Mr. PJ: Some space 3 feet</td>
</tr>
<tr>
<td>8. Nurse: How would you prefer to be addressed or greeted? Any</td>
</tr>
<tr>
<td>nick name</td>
</tr>
<tr>
<td>Mr. PJ: Señor Jimenez, Pet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family Roles and Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Nurse: Who makes decisions in your family?</td>
</tr>
<tr>
<td>Mr. PJ: My wife</td>
</tr>
<tr>
<td>10. Nurse: Who makes decision about health and health care?</td>
</tr>
<tr>
<td>Mr. PJ: My Wife</td>
</tr>
<tr>
<td>Wife: Yeah that’s right, I make the decisions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Workforce Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Nurse: What is the nature of work that you do?</td>
</tr>
<tr>
<td>Mr. PJ: Super of a building in the city.</td>
</tr>
<tr>
<td>12. Nurse: Are there any factors that are causing you stress at</td>
</tr>
<tr>
<td>your workplace?</td>
</tr>
<tr>
<td>Mr. P. J: Yes! Complaints from the tenants</td>
</tr>
<tr>
<td>Wife: Also they keep calling him all the times for small things.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biocultural Ecology</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Nurse: What are the most common illness and diseases in your</td>
</tr>
<tr>
<td>family?</td>
</tr>
<tr>
<td>Mr. P. J: Diabetes, High Blood Pressure, Arthritis, Asthma, and</td>
</tr>
<tr>
<td>Heart Attack.</td>
</tr>
<tr>
<td>Wife: Also Depression is common in our family.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>High-risk Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Nurse: In which high-health risk behaviors do you engage, like</td>
</tr>
<tr>
<td>smoking, drinking etc?</td>
</tr>
<tr>
<td>Mr. PJ: Smoking one-pack a day, occasional drinking</td>
</tr>
<tr>
<td>Wife: If drinking every weekend is considered occasional.</td>
</tr>
<tr>
<td>15. Nurse: What do you do to control or reduce your risky behaviors?</td>
</tr>
<tr>
<td>Mr. P. J: Nothing in particular. I do as I feel like it.</td>
</tr>
<tr>
<td>16. Nurse: Which high-risk health behaviors do you see most</td>
</tr>
<tr>
<td>frequently in your family? In your community?</td>
</tr>
<tr>
<td>Mr. PJ: Poor diet, no exercise &amp; drinking</td>
</tr>
<tr>
<td>17. Nurse: What might you do to help decrease these high-risk</td>
</tr>
<tr>
<td>behaviors?</td>
</tr>
<tr>
<td>Mr. PJ: I might exercise, change my diet and reduce my drinking and</td>
</tr>
<tr>
<td>smoking. I want to talk to my priest, spending time with</td>
</tr>
<tr>
<td>grandchildren.</td>
</tr>
</tbody>
</table>
TABLE 11 – Continued

Nutrition
18. Nurse: What are your personal beliefs about weight and health?
Mr. P.J: I am fine with my weight. I think I am healthy.
Wife: I always tell him watch what you eat, but do you think he cares?
19. Nurse: In what food rituals does your family engage?
Mr. P.J: Everyday rice and beans. Chicken, steak or pork daily, baked pork chops, plantones and tostones, can corns, mashed potatoes with butter, potato salad with mayonase, yuca, malta, and sofrito.
20. Nurse: What do you eat to maintain your health?
Mr. P.J: Nothing I eat as I feel like.
21. Nurse: What do you eat when you are ill?
Mr. P.J: Chicken Soup with salt and fish head soup, ponche de malta.
22. Nurse: Do you have specific food rituals for holidays?
Mr. P.J: Yes I do! Roast pork pernil, fried skin. Rice pigeon peas, pasteles, arroz con dulce and flan, coquito.
23. Nurse: Does food pattern change for you by the season or weekdays?
Mr. P.J: No
24. Nurse: Do you have difficulty getting your preferred food?
Mr. P.J: No
25. Nurse: What other food limitations do you have?
Mr. P.J: None

Death Rituals
26. Nurse: What terms do you use when referring to death?
Mr. P.J: se lo llevo pateco (Funeral Home Owner took him)
27. Nurse: What specific burial practices do you have in your family/culture?
Mr. P.J: Waiting on family to arrive for burials but we don’t want to talk about death.
28. Nurse: How do people grieve in your culture?
Mr. P.J: Lighting Candles, dark black clothes for weeks, and for months no make-up and jewelry
29. Nurse: Do you have a living will or advance directives? If not why not?
Mr. P.J: No. We don’t want to think about death, too painful.

Spirituality
30. Nurse: What religion do you identify with?
Mr. P.J: Roman Catholic
31. Nurse: How are spirituality, religiosity and health connected to you?
Mr. P.J: Yes I go to church every Sunday and mostly weddings. I have a strong belief in God.

Health Care Practices
32. Nurse: Do you take vaccines yearly to prevent the flu or other illness?
Mr. P.J: No unless a doctor advises me because of my condition. If I get flu then I use Vicks and tea with herbs, guarapos.
33. Nurse: Do you have adequate health insurance?
Mr. P.J: Yes I think so.
34. Nurse: Do you have regular checkups with your health care practitioner?
Mr. P.J: No
35. Nurse: In what self-medicating practices do you engage?
Mr. P.J: Home remedies Aloe Vera plant, fresh raw garlic; Sour Sop leaves (guanabana).
36. Nurse: What makes you decide when to see your health-care practitioner when you have an illness?
Mr. P.J: My wife and when I am too sick and almost dying
37. Nurse: What complementary and alternative medicine have you used? Were they helpful?
Mr. P.J: I use the home remedies but I have no side effects and I feel better.
38. Nurse: Are there any barriers in healthcare that you face?
Mr. P.J: I don’t have any barriers I don’t need much of healthcare and I don’t trust these doctors.

Clinical situations. The researcher designed five clinical situations, each one of which was rated by the clinical-educational group as accurate, inaccurate, needs revision and
suggestions to edit. The clinical situations consisted of a scenario related to the simulation case and had three or four branches of dialogue between the patient, the nurse, and the family member. Presented below is each clinical situation (original), the rating of the clinical-educational group and the revised version of the clinical situations. Each member was given specific instructions to follow when critiquing the clinical situations. They were explained that in each clinical situation there is a positive and negative communication (dialogue) designed in branches. Each dialogue of the narrative branch is to be scored based on assessing the presence of three factors based on Leininger’s Sunrise Model (Leininger, 2011). The instructions given were to score a branch high if all three factors were present and to score low if they were partially present or absent. The maximum score on each branch was 20. The three questions to ask when scoring were:

1. Did the conversation accommodate the cultural beliefs of the patient?
2. Did the decision made by the nurse reflect preservation of cultural values?
3. Was the nursing care restructured to incorporate the culture of the patient?

The members were asked to email back their feedback if they were unable to attend the meeting physically. The original and the revised clinical situations are presented in figures (2-11). The clinical-educational group of the advisory board critiqued the clinical situations and determined scoring. Table 12 presents the scoring and feedback of clinical situations, which includes the average scores received by each branch of the clinical situation and member suggestions for revisions.
**Critiquing Clinical Situations**

**Simulation Case:** A 66-year-old Nuevo Rican male, Mr. Pedro Jimenez (Mr. PJ) who has a history of type 2 diabetes is admitted to the hospital with hyperglycemia and is recovering from a non-ketotic coma and is accompanied by his wife.

**Clinical Situation #1**
- PJ's HgA1C result is 9.9 Percent.
- Patient needs education on decreasing the HgA1C levels.

**Nurse Response**
- "You must decrease your HgA1C levels"

**Patient Response**
- "OK nurse I will work on it"

**Nurse Response**
- "What are your dietary habits?"

**Patient Response**
- "Well I really eat as I feel like, I hate dieting"

**Nurse Response**
- "Do you check your finger stick daily?"

**Patient Response**
- "No I don't have time"

**Nurse Response**
- "Ok, what are the most common foods that you eat?"

**Patient Response**
- I eat rice and beans and pork almost everyday.

**Nurse Response**
- "No wonder your HgA1C levels are so high" you must modify your diet.

**Patient Response**
- "Yes I will"

**Nurse Response**
- We will work with the dietician on a meal plan and will incorporate your favorite foods.

**Patient Response**
- "I am glad you agree to change"

**Nurse Response**
- "I am glad you agree to change"

**Score:**
- ___ / 20

**Score:**
- ___ / 20

**Score:**
- ____ / 20

**Score:**
- ____ / 20

**FIGURE 2. Clinical Situation #1**
FIGURE 3. Clinical Situation #2
FIGURE 4. Clinical Situation #3
FIGURE 5. Clinical Situation #4
**FIGURE 6. Clinical Situation #5**

<table>
<thead>
<tr>
<th>Clinical Situations and Average Scores</th>
<th>Rating (n=9 members)</th>
<th>Suggestions to Revise/Edit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Branch 1 (2.7/20)</td>
<td>Accurate (2)</td>
<td>- To change the case to a Nuyorican patient.</td>
</tr>
<tr>
<td>Branch 2 (17.7/20)</td>
<td>Inaccurate (1)</td>
<td>- To build pop-ups explaining terms and meanings in the case.</td>
</tr>
<tr>
<td>Branch 3 (0/20)</td>
<td>Needs Revision (6)</td>
<td>- Include family member in the dialogue</td>
</tr>
<tr>
<td>Branch 4 (0/20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Branch 1 (0.5/20)</td>
<td>Accurate (3)</td>
<td>- On branch 4 also add education of patient on need for regular eye-check-up.</td>
</tr>
<tr>
<td>Branch 2 (0.5/20)</td>
<td>Inaccurate (0)</td>
<td></td>
</tr>
<tr>
<td>Branch 3 (0.5/20)</td>
<td>Needs Revision (6)</td>
<td></td>
</tr>
<tr>
<td>Branch 4 (20/20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Branch 1 (8.8/20)</td>
<td>Accurate (9)</td>
<td>- None</td>
</tr>
<tr>
<td>Branch 2 (18.3/20)</td>
<td>Inaccurate (0)</td>
<td></td>
</tr>
<tr>
<td>Branch 3 (4.4/20)</td>
<td>Needs Revision (0)</td>
<td></td>
</tr>
<tr>
<td>Branch 4 (0.5/20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Branch 1 (0/20)</td>
<td>Accurate (3)</td>
<td>- To revise the case. To add lifelong disease management with incorporating spiritualism.</td>
</tr>
<tr>
<td>Branch 2 (0.5/20)</td>
<td>Inaccurate (0)</td>
<td></td>
</tr>
<tr>
<td>Branch 3 (16.6/20)</td>
<td>Needs Revision (6)</td>
<td></td>
</tr>
<tr>
<td>5. Branch 1 (20/20)</td>
<td>Accurate (9)</td>
<td>- None</td>
</tr>
<tr>
<td>Branch 2 (1.1/20)</td>
<td>Inaccurate (0)</td>
<td></td>
</tr>
<tr>
<td>Branch 3 (1.1/20)</td>
<td>Needs Revision (0)</td>
<td></td>
</tr>
</tbody>
</table>

Revised clinical situations. Based on the feedback from the community advisory board members, Clinical situations 1, 4 and 5 were revised and are presented below in the following figures and scoring is added on each situation.
Simulation Case: A 66-year-old Nuyorican male, Mr. Pedro Jimenez (Mr. PJ) who has a history of type 2 diabetes is admitted to the hospital with hyperglycemia and is recovering from a non-ketotic coma and is accompanied by his wife.

Clinical Situation # 1
Pt's HgA1C result is 9 Percent. Patient needs education on decreasing the HgA1C levels.

Disease characterized by increased glucose levels

Glycated Hemoglobin

Nurse Response
You must decrease your HgA1C levels

Patient Response
OK nurse I will work on it

Nurse Response
What are your dietary habits?

Patient Response
Well I really eat as I feel like, I hate dieting.

Nurse Response
Do you check your finger stick daily?

Patient Response
No I don’t have time.

Nurse Response
OK, what are the most common foods that you eat every day?

Patient Response
I eat rice and beans and pork almost every day.

Family Member
That’s correct he eat it every day

Nurse Response
No wonder your HgA1C Levels are so high you must modify your diet.

Patient Response
Yes I will

Nurse Response
You must check your blood glucose level

Patient Response
Yes I will

Nurse Response
We will work with the dietician on a meal plan and will incorporate your favorite foods.

Patient Response
That’s Wonderful

Nurse Response
Score: 2.7/20

Family Member
That’s great he eat it every day

Nurse Response
Score: 17.7/20

Nurse Response
Score: 0/20

Score: 0/20

FIGURE 7. Revised Clinical Situation #1
FIGURE 8. Revised Clinical Situation #2

Clinical Situation #2
Patient has not had an eye-checkup in the last five years. Patient needs to be educated on utilizing preventive measures.

Nurse Response
You must have an eye-check up every year

Patient Response
I know but I don’t feel the need to do so.

Nurse Response
It is not about how you feel; it is about decreasing healthcare cost.

Patient Response
Well it is not my fault that I developed Diabetes

Nurse Response
You could have prevented it in the first place

You must make an eye appointment today

Your Doctor did not tell you this?

He might have but I don’t recall

When you will go blind then you will understand the importance

I see

I usually work Monday-Friday 8AM to 5 PM and weekend I spend time with my family. Evenings during work day might be better.

Regular eye checkups will help prevent blindness. Can I make a referral to see an ophthalmologist in the evening hours? Will that work for you?

“Absolutely

Score: 20/20
FIGURE 9. Revised Clinical Situation #3

Clinical Situation #3
Patient states that he takes his diabetic medication only when he feels his sugar is high.
Patient needs education on the importance of medication adherence in managing Type II Diabetes

Nurse Response
How do you know when your sugar is high?

Patient Response
When I just don’t feel right.

Nurse Response
Can you describe your feeling?

Patient Response
I feel I am thirstier, and want to urinate more often

Nurse Response
Those seems to be correct symptoms

Score: 8.8/20

Can you explain to me why do you think you need medication only when the sugar is high?

Nurse Response
Well the medication helps my sugar to go down

Patient Response
I do it only once in a while.

Nurse Response
That is correct; however it is important for blood sugar to remain within the normal range with the help of medication, exercise and diet

Patient Response
It hurt’s and I don’t want to lose blood every day.

Nurse Response
How can you be sure that your sugar is high?

Score: 18.3/20

Score: 4.4/20

Score: 0.5/20

Do you check your finger stick glucose every day?

Nurse Response
That’s why I take my medications only when my sugar is high.

Patient Response
I just know it.

Nurse Response
Why is that?

Patient Response
You hardly lose any blood it is such a small prick.

Nurse Response
You might be totally wrong for all you know.
FIGURE 10. Revised Clinical Situation #4
FIGURE 11. Revised Clinical Situation #5
Development of Self-Reflection

Self-debriefing questions. The researcher developed four self-debriefing questions and asked the advisory board members to rate each question as acceptable, unacceptable, needs revision and suggestions to revise. Presented below in Table 13 are original self-debriefing questions, ratings, feedback, and revised self-debriefing questions.

TABLE 13. Self-Debriefing Questions, Ratings and Revisions. (N=5 Members)

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Describe how you felt as you cared for a Puerto Rican virtual patient?</td>
<td>Acceptable</td>
<td>Unacceptable</td>
<td>Needs Revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Describe any personal difference you felt towards Puerto Rican virtual patient?</td>
<td>Acceptable</td>
<td>Unacceptable</td>
<td>Needs Revision</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. Were you able to identify any particular cultural difference between your cultural beliefs and that of your patient?</td>
<td>Acceptable</td>
<td>Unacceptable</td>
<td>Needs Revision</td>
</tr>
<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td>4. How will this experience impact your care when you encounter a real Puerto Rican patient in a clinical setting?</td>
<td>Acceptable</td>
<td>Unacceptable</td>
<td>Needs Revision</td>
</tr>
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</tbody>
</table>

Revised Self-Debriefing Questions:

2. Describe any difference in cultural beliefs that you identified between you and your patient during the simulation experience?
3. Describe any difference in cultural practices that you identified between you and your patient during the simulation experience?
Aim III: Evaluation of the CAB Group Process

During each meeting, the researcher asked the board members to complete an evaluation form, which consisted of the questionnaire for cultural advisory board process evaluation and three open-ended questions asking the most and the least helpful aspect of the group session, and what should be done differently next time. Presented in this section are both the qualitative and quantitative findings obtained at each meeting and the changes implemented. This section begins with explaining how the rigor was maintained in qualitative analysis.

Qualitative Analysis Findings

The three questions asked were: what was the most helpful aspect of the meeting; what the least helpful aspect of the meeting; and what should be done differently next time. After each meeting the written responses were content analyzed. The responses of members to three open-ended questions were entered in a Microsoft Excel sheet and were coded using small phrase. After assigning a code to each response, it was important to know how frequently these codes were assigned to responses. It was important to know how many members of the board felt a certain way. Therefore, frequency on each theme was calculated using a Microsoft Excel sheet to understand the overall perceptions of the board members regarding the meeting/group sessions. Using frequency also enable graphical display for visuals for better understanding. Presented in Table 14 are the major themes and frequency from each meeting with the cultural group.

Similarly, each Clinical-Educational group member’s responses to the three open ended questions were content analyzed. The member responses to three open-ended questions were coded and frequency of codes was calculated to identify major emergent themes. Presented in Table 15 are the findings from each meeting with the clinical-educational group including
responses to the most helpful and the least helpful aspect of each meeting, and also includes what needed to be done differently during the next meeting. The frequency of each theme is presented as percentages in the table. The discussion on interpretation of major themes and changes implemented are discussed in Chapter 5.

**Emerged Themes**

After conducting the content analysis of three-open ended questions of all responses across the study, the researcher noted common themes that emerged from both groups of the CAB. The researcher considered the most frequently occurring themes as major themes. In analyzing the member responses across all meetings with both groups, on the most helpful aspect of the meeting, the researcher noted that the most frequently occurring themes were “group interactions” and “study presentation.” Majority of the CAB members felt that there was interactions, which indicated that they felt a part of the CAB and where able to share their ideas. Some examples from their statement include “the open-ended communication,” “seeing the dynamics of the clinical situations and allowing for giving suggestions, sharing ideas,” “the most helpful aspect of this session was that everyone contributed to the project” and “working together to create.” Less frequently occurring themes included “Puerto Rican health issues,” “trust,” and “openness.” Some members gained understanding on existing health disparities among the Puerto Rican population, which they were unaware of. Some members felt that there was trust evident during meeting. Also openness was mentioned which meant that members felt free and open to share their thoughts on various topics.

In analyzing the least helpful aspect of the meeting the majority of the member responses indicated “none,” some examples include, “nothing, all was perfect,” “didn’t find any” however
there were responses that indicated areas of improvement, which included “absence,”
“timeliness,” “historical facts” and “meals.” Absence was indicated due to members who were
absent in the meeting and the members who were present felt that they should have been present.
Timeliness was also mentioned because many members arrived late and meeting was delayed.
Historical facts was identified as some members kept sharing much information about the
historical facts related to Puerto Ricans and racism, which some members felt was unnecessary.
Meals were also identified as a concern as some members wanted to eat during the meeting and
some at the end of the meeting.

In analyzing the responses to the question on what needs to be done differently in the
next meeting, the majority of the member responded as “none,” however, there were members
whose responses indicated areas where changes were needed; these areas were “more members,”
“deeper engagement,” “timeliness” and “location.” Some members felt that more members
would be better as there will be increased contribution. Deeper engagement was mentioned in the
first meeting evaluation, because the first meeting was more introductory and CAB members did
not engage in developing the content. Timeliness was indicated as the members who arrived on
time felt that others must arrive in a timely manner as well. The location was indicated because,
in one particular location there were protests in the street and the members felt that location
change may be necessary.
### TABLE 14. Qualitative Findings from Community Advisory Board (Cultural) Evaluations.

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Open Ended Questions</th>
<th>Themes Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Most Helpful Aspect</td>
<td>Board Member Introductions 27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Rican Health Issues 13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cultural Awareness 7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Study Presentation 53%</td>
</tr>
<tr>
<td></td>
<td>Least Helpful Aspect</td>
<td>None 100%</td>
</tr>
<tr>
<td></td>
<td>Differently Next Time</td>
<td>Meals 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No Changes 71%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Deeper Engagement 14%</td>
</tr>
<tr>
<td>Second</td>
<td>Most Helpful Aspect</td>
<td>Group Interactions 38%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Openness 25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Puerto Rican Cultural Knowledge 25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Trust 13%</td>
</tr>
<tr>
<td></td>
<td>Least Helpful Aspect</td>
<td>Timeliness 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Historical Facts 29%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None 57%</td>
</tr>
<tr>
<td></td>
<td>Differently Next Time</td>
<td>Timeliness 25%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None 75%</td>
</tr>
<tr>
<td>Third</td>
<td>Most Helpful Aspect</td>
<td>Group Interactions 43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Presentation 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time Management 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Openness 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Informative 14%</td>
</tr>
<tr>
<td></td>
<td>Least Helpful Aspect</td>
<td>Absence 20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None 60%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Timeliness 20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None 80%</td>
</tr>
<tr>
<td></td>
<td>Differently Next Time</td>
<td>More Members 20%</td>
</tr>
<tr>
<td>Fourth</td>
<td>Most Helpful Aspect</td>
<td>Health of Puerto Ricans 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cultural Awareness 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group Productivity 43%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Content Display 14%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Group Interactions 14%</td>
</tr>
<tr>
<td></td>
<td>Least Helpful Aspect</td>
<td>Absence 40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>None 60%</td>
</tr>
<tr>
<td></td>
<td>Differently Next Time</td>
<td>None 100%</td>
</tr>
</tbody>
</table>
TABLE 15. *Qualitative Findings from Community Advisory Board (Clinical-Educational) Evaluations.*

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Open Ended Questions</th>
<th>Themes Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>Most Helpful Aspect</td>
<td>Group Interactions 67%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Study Presentation 17%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Faculty Response 17%</td>
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<td>Least Helpful Aspect</td>
<td>None 80%</td>
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<td>Increase Participants 20%</td>
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<td></td>
<td>Differently Next Time</td>
<td>None 75%</td>
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<td>Discussion on Implementation 25%</td>
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<td>Second</td>
<td>Most Helpful Aspect</td>
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<td>Clinical Situation Dynamics 13%</td>
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<td>Least Helpful Aspect</td>
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<td>Different Room 17%</td>
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<td>Third</td>
<td>Most Helpful Aspect</td>
<td>Group Interactions 80%</td>
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<td>Self-Knowledge 20%</td>
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<td>Least Helpful Aspect</td>
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<td>Location 20%</td>
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**Quantitative Analysis Findings**

During each meeting with both groups of the Community Advisory Board, the *cultural group* and the *clinical-education group*, members rated group dynamics (Trust, Mutual Respect, Effective Communication, Confidentiality, Active Engagement, Decision Making, Conflict Addressed, and Personal Contribution), using the “*Questionnaire for CAB Process Evaluation*” designed for this study. The member ratings were entered in Statistical Package for the Social Sciences (SPSS) software to obtain descriptive and analysis of variance (ANOVA) findings. The mean scores for the *cultural group* meetings are as follows: Trust, M=3.89 (SD=0.32), Mutual Respect, M=3.92 (SD=0.26), Effective Communication, M=3.96 (SD=0.19), Confidentiality, M= 3.86 (SD=0.34), Active Engagement, M= 3.92 (SD=0.07), Decision Making, M=3.92 (SD=0.10), Conflict Addressed, M= 3.77 (SD=0.26), and Personal Contribution, M= 3.85 with
The One-way ANOVA findings indicated no statistically significant difference (F<1.46, p>.05) in group dynamics ratings. The rating by the members were consistent across all four meetings indicating that these group dynamic variables were maintained in the cultural group meetings, which is recommended in CBPR studies (Israel et al., 2013).

Similarly, descriptive analysis and ANOVA was conducted on group dynamic ratings of the clinical-educational group across three meetings. Confidentiality had a mean of 3.94 (SD=0.24) and was the only variable that was rated differently; other group dynamics were rated as 4 by all members for all meetings. The ANOVA findings indicated no statistically significant difference in Confidentiality (F (2,14) = .90 p>.05). This finding indicates that the member ratings on group dynamic variables were consistent as expected in a CBPR study (Israel et al., 2013).

**Summary of Findings**

The purpose of this community-based participatory research study was to develop content for an educational tool for cultural competency of nursing students who will provide care to the Puerto Rican population of NYC. The educational tool is an online virtual interactive simulation scenario with a Puerto Rican virtual patient who is diabetic and is admitted to the hospital, has hyperglycemia and is recovering from non-ketotic coma. The steps of the simulation scenario were based upon the framework for developing cultural competency simulation experiences. This framework was developed as a part of this dissertation work by reviewing existing cultural competency theories and using concepts from those theories that were felt most applicable to building a virtual cultural competency simulation experience. The five major concepts in the framework included: *cultural self-assessment, cross-cultural knowledge, cross-cultural*
experiences, feedback and self-reflection. In this study, the simulation content was developed for cross-cultural knowledge, cross-cultural experiences, and feedback and self-reflection stages of simulation.

Overall the three major aims of the study were achieved as presented in chapters 3 and 4. There was a community advisory board established which included members of the Puerto Rican community, health care professionals and educators. The advisory board in collaboration with the researcher developed the content for OVIS–Puerto Rican case. During the content development phase, formative evaluations were obtained using both qualitative and quantitative methods to understand the perceptions of the board members regarding meetings and to measure ratings on group dynamics, essential for a CBPR study. The discussion regarding findings of this study about the literature, the study limitations and implications for nursing practice is found in the next chapter.
CHAPTER 5: DISCUSSIONS AND IMPLICATIONS

With increasing cultural diversity in the U.S. and increasing health disparities among the ethnic minority populations, it is vital that future health care professionals develop cultural competency in caring for vulnerable population groups with known health disparities residing in a specific geographical area of clinical practice. Developing and maintaining community partnerships between key community stakeholders and academicians strengthen academic-community relationships, and is essential to addressing health disparities (Crist, Parsons, Warner-Robbins, Mullins, & Espinosa, 2009). In NYC, the Puerto Rican population has significant health disparities in comparison with the other Hispanic and non-Hispanic groups (National Institutes of Health, 2013; CDC, 2014). Therefore, the focus of this study was to develop cultural competency of the health professionals in caring for the Puerto Rican population in NYC, starting with student nurses who may potentially practice in NYC. In this CBPR study, content for an educational tool, an OVIS was developed for cultural competency education of nursing students in caring for the Puerto Rican population using a CAB consisting of cultural, clinical and educational experts from the Puerto Rican community. This chapter discusses the findings of this (CBPR) study in relation to the research problem and existing findings. It also includes future implications for nursing practice, the strengths and limitations of the study and recommendations for future research.

Discussion Related to Research Problem

With the continued existence of health disparities among ethnic minority populations, the major goals of Healthy People 2020 is to achieve health equity, eliminate disparities and improve health (Department of Health and Human Services, 2014). One of the strategies identified
includes cultural competence education and training of health care professionals to care for vulnerable populations. Promoting health equity is a challenge that health care practitioners face today, and with rapidly-changing demographics in the U.S., it warrants more attention. Since cultural competency education is considered an effective strategy for reducing racial and ethnic disparities and improving health care quality, it is important to develop educational programs that are effective (Betancourt, Green, Emillo Carrillo, & Park, 2005). Involving Puerto Rican community members in the development of OVIS brought valuable input regarding their common cultural health beliefs and practices.

In this CBPR study the three major aims that guided the content development for the OVIS educational tool were: 1) To develop a community advisory board consisting of Puerto Rican community members, health care professionals and educators, 2) To develop content (script) for a Puerto Rican OVIS case in collaboration with the community advisory board, and 3) To evaluate the community advisory board group process, using both qualitative and quantitative methods, during the content development of the OVIS case. The following section discusses the findings of this CBPR study in relation to existing literature and is organized using the three aims of this study.

**Aim I: Developing a Community Advisory Board**

The first research aim of this CBPR study was to develop a CAB with cultural, clinical and educational experts to develop content for the OVIS educational tool along with the researcher. In this study, the first aim was met, and a CAB was established consisting of cultural, clinical and educational experts from the Puerto Rican community. The CAB was divided into two different groups with different goals to meet in relation to developing content. The cultural
experts were in the *cultural group* and the clinical and education experts were in the *clinical-educational group*.

For establishing community partnerships, a previous positive connection with the community of interest makes the process easier (Israel et al., 2013). In this study, the researcher started the recruitment process using an initial contact from the community, whom the researcher had met during the planning of a past medical mission. This initial contact made the recruitment process of other board members easier which is consistent with the literature findings. A “reputational method of recruitment” is suggested in CBPR, to help build a trusting relationship and for an effective partnership (Israel et al., 2013). In this study, based on the literature suggestion, a reputational method of recruitment was utilized which probably made the establishment of CAB much easier.

The literature suggests the researchers immerse in the community of interest through personal contributions for effective CBPR partnerships (Ellis & Walton, 2012). In this study, the researcher engaged in the community events conducted by the Coordinated Agency of Spanish Americans (CASA), the Hispanic Counseling Center (HCC) and the National Association of Hispanic Nurses (NAHN). The researcher engaged in CASA by participating in CASA events, particularly a mother’s day celebration. HCC had conducted a community health fair event where the researcher offered health screening services in a wellness clinic, and also participated in a fundraising gala. The researcher got engaged with NAHN by attending monthly chapter meetings and introduced NAHN to many nursing students and a few accompanied her to chapter meetings. The researcher’s contribution to the Hispanic community facilitated the building of mutual trust and recognition with the board members.
The literature suggests selecting those individuals from the community who express an interest in serving on the board and are a good fit for meeting the purpose of the CAB (Newman et al., 2011). In this study, one of the criteria set for selection of the CAB members was the willingness of individuals to engage in the research process that helped establish the CAB. The literature also suggests that small size groups are more effective than large groups because individuals are less likely to actively engage in large group (Johnson & Johnson, 2008; & Kerr, 1989). The average number of members in attendance during all CAB meetings was 6 and the rating on the questionnaire for CAB process evaluation indicated that members were actively engaged and were able to contribute personally to the OVIS content.

CBPR studies suggest a partnership which uses community to identify and address problems important to its residents and it has been shown to be successful in recruitment and retention of participants (Baiardi, Brush, & Lapides, 2010; Berge & Mendenhall, 2009; Israel et al., 2010; Jernigan, 2010; Mendenhall et al., 2010). Consistent with the literature findings, there were successful recruitment and retention of Puerto Rican community members establishing a CAB in this CBPR study (Israel et al., 2013).

**Aim II: Development of OVIS Content**

The *cultural group* of the community advisory board engaged with the researcher in developing content related to common health care beliefs and practices of the Puerto Rican population and virtual patient responses during the cultural assessment. The *clinical-educational group* of the CAB primarily focused on critiquing the clinical situations and determining feedback and scoring in the OVIS case. The literature indicates that community partnerships are recommended as a strategy for developing cultural competency education programs in health
disciplines (Anderson, Calvillo, & Fongwa, 2007). The community partnership that was established in this study helped develop content for a cultural competency educational tool for nursing education, consistent with the literature finding. CBPR research has emerged in the past decades integrating education and social action to improve health and reduce health disparities, using principles of co-learning, mutual benefit, and long-term commitment (Wallerstein & Duran, 2006). In this study, the qualitative analysis of open-ended questions indicated “study presentation” as a frequently occurring theme. The study presentation was considered valuable by the CAB members, and it included information regarding the presence of health disparities among the Puerto Rican population. This finding indicates co-learning and a sense of mutual benefit that were evident in CAB evaluations. Additionally, most of the members indicated that they would like to continue to remain as CAB members for future studies, which is consistent with the literature finding of willingness for long-term commitments in CBPR studies.

CBPR has been used to develop consumer-driven cultural competency tools using focus groups with ethnic minorities with the purpose of generating items, developing construct definitions, and content domains (Johnson-Conley, 2009). In this study, the ethnic minority communities of interest were the Puerto Ricans, and they were actively engaged in the meetings to develop the content of the educational tool. Involvement of community members in CBPR studies provides the opportunity to develop mutually respectful and trusting relationships through partnership to collaboratively design, implement and integrate culturally competent components in nursing curricula (Anderson, Calvillo, & Fongwa, 2007). It is important for the group members to feel accepted through mutual recognition, which increases the likelihood of CBPR success (Forsyth, 2009). In CBPR, it is also important for the CAB to have a sense of
belonging, shared purpose and the ability to unite to be effective in working together (Israel, Eng, Schulz, & Parker, 2013). There was evidence of “mutual respect” and “trust” felt by members as these group dynamics were highly rated on CAB process evaluations. Therefore, it is evident from the findings of this study that mutually respectful and trusting relationships can be established through CBPR partnerships, which is consistent with the literature findings. Activities that foster trusting relationships among members are especially necessary for the early stages of CBPR. Some activities that have been recommended in the literature include brief interviews with each member followed by members introducing each other (Israel et al., 2013). In this study, the members were asked to give their introductions during each group’s first meeting. The most helpful aspect of the first meeting with the cultural group was “board member introductions.”

Communication between meetings is important and can be established using agendas and minutes (Israel et al., 2013). In this study, based upon the recommendations in the literature, the meeting agenda was set before the meeting and the minutes were emailed to all members between meetings (Israel et al., 2013). There were specific goals set for the two groups of the community advisory board. The cultural group participated in developing the cross-cultural knowledge and cross-cultural experience part of the simulation experience over four meetings. The clinical-educational group participated in developing the cross-cultural knowledge testing, clinical situations, feedback, and reflection part of the simulation experience over three meetings. To develop the content, it was important in this study to have a planned meeting agenda with goals to meet at the end of the meeting, as suggested in the literature. During the second meeting with the cultural-group the objective of critiquing the entire power-point presentation was not
feasible and meeting the goal had to be deferred to the third meeting when a facilitator was added to help with time management. Using audio taping during the meeting was helpful during content revision. Drafting the meeting minutes within twenty-four hours post-meeting allowed for easier recollection and documentation of the meeting discussion. The minutes were emailed following each meeting to maintain communication with the CAB members as suggested in the literature by Israel and colleagues (2013).

During the critique of the clinical situations by the clinical-educational group, the average scores given by the members in scenario 1, 3 and 4 for the correct branch was less than the maximum score of 20. However, the correct branch did receive a score of above 70%, which met the consensus for decision-making set for this research study. This decision is consistent with the consensus decision-making approach utilized in the literature for CBPR studies (Johnson & Johnson, 2008; & Israel et al., 2001). Use of a consensus approach was explained to the CAB members during the first meeting, and the members agreed to use this approach for decision making.

The literature suggests establishing norms for members working together in CBPR studies which include guidelines for communication, decision making and addressing conflicts (Israel et al. 1998, 2001, 2008). When establishing procedures, group dynamics and accepted social norms are to be considered to ensure open communication (Israel et al., 2013). The operating principles and group dynamics were clearly established and were communicated with the advisory board during the first meeting, consistent with the literature. At the beginning of the first meeting of each group, the operating guidelines for CAB were presented, which included an explanation of a consensus approach for decision making, use of modes of communication, and
group dynamics. For maximizing group participation, the researcher posed a question, and each member took turns to respond. The members were given the option to write down their responses, but verbal discussion and dialogue were preferred by the CAB members.

**Aim III: Community Advisory Board Evaluations**

Literature suggests that CBPR partnerships benefit from devoting time to evaluate and review their process. Acting immediately on the feedback helps improve CBPR partnerships (Plumb, Collins, Cordeiro, & Kavanaugh-Lynch, 2008; Schulz, Israel, & Lantz, 2003; Wallerstein et al., 2008). This strategy was utilized in this CBPR study where at the end of each meeting the researcher obtained feedback of CAB meetings, analyzed the responses of each meeting and implemented changes in the next meeting.

The evaluations from the first meeting of the cultural group indicated that there should be discussion regarding meals and member engagement in the next meeting. At the beginning of the second meeting the researcher discussed the meals and it was indicated that dinner should be served at the end; however, some members felt that since the meeting is after a long day of work they preferred to eat during the meeting. The researcher offered flexibility for members to choose to eat whenever they felt appropriate. The second discussion was regarding member engagement; the researcher discussed that because the purpose of the first meeting was mostly introductory the objective was for the members to know about the study and also to get to know one another. The researcher emphasized that in future meetings there would be more active engagement in developing content by the board members.

The evaluations from the second meeting of the cultural group indicated that there were changes needed in time management. Many members came late to the second meeting and also
much time was spent discussing historical facts. The researcher decided to use a facilitator as suggested by her dissertation committee members for the next meeting. At the third meeting, the researcher appointed a facilitator from CASA, who kept time limits for discussion on each topic; however, in the third meeting evaluation again time was indicated as an area of improvement. Upon discussion, it was understood that it was due to some members arriving late to the meetings and not related to using a facilitator for time-keeping. Another area of concern noted in the evaluation of the third meeting of the cultural group was the absence of members. There were only five members in attendance at the third meeting. The missing members had personal and family commitments, and they communicated their regrets for not attending the meeting. Because some members notified the researcher only a few hours before the meeting, it was not feasible to reschedule the meeting. The fourth meeting evaluations of the cultural group also indicated absence as a concern as the fourth meeting was attended by only six members. Regardless of the absence, it was important to note that the objectives of developing content for each meeting were met. There were many themes that emerged as the most helpful aspect of the meetings upon conducting qualitative analysis of open-ended written responses. It was evident from the analysis of the member responses that group interaction and the study presentation were the most frequently emerging themes.

The open-ended question responses from the first meeting evaluations with the clinical-educational group indicated the need to increase members on the board and also to further discuss implementation of this study. The researcher added two more members to the group before the next meeting. She also explained to the board members that two faculty members
were working remotely on this study from Puerto Rico. The researcher emphasized that this is the initial phase of the study, and the objective is to first develop OVIS content.

The analysis of the evaluation from the second meeting of the clinical-educational group indicated the need for changing the conference room as there were interruptions during the meeting; this was primarily due to a protest, which was occurring in the street. Therefore, the next meeting location was changed from the New York Blood Center to the Veterans Affairs Hospital, NYC. Regardless, in the third meeting evaluation, the meeting location was still mentioned as a concern. The new location added extra travel time for some members, which was discussed during the meeting.

In analyzing the member responses for the most helpful aspect of the meeting, it was interesting to note that the most frequently occurring themes were also “group interactions” and “study presentation,” which were similar to the cultural group evaluations. This finding suggests that the strategy used in this study was effective in the areas of “group interactions” and “study presentation,” they were frequently occurring themes among all members, including the cultural group and the clinical-educational group. Neither group’s members had met or interacted with each other, before this study.

When the scores obtained on the CAB process evaluation questionnaire were compared across all meetings, it was noted that “conflict addressed” was rated lowest (3.77) and “effective communication” was rated highest (3.97). There were no particular conflicts that occurred during any advisory board meetings; however, there were instances where there were differences in individual opinions. A possible explanation for the item Conflicts Addressed receiving the lowest rating could be the wording used in this item. The item read: Do you think conflicts if any were
addressed appropriately? This item needs revision as there are two parts to this question. First: Was there a conflict? Second: Was the conflict handled appropriately? For future use of this questionnaire, it is suggested to reword the questions and use agree-disagree Likert scale.

When the means obtained for each item of the CAB process evaluation of the clinical-educational group were compared across all meetings, one item’s rating (confidentiality) varied across meetings. All other items were rated as a four across all meetings by all members. One reason for the confidentiality rating might be the security interruption, during the meeting. There were also occasions when the dinner arrived late and caused meeting interruption and a few members wanted to have dinner during meetings.

The effectiveness of advisory board meetings was evaluated using one-way ANOVA. There was no statistical difference found in ratings of either group on group dynamics. In a CBPR study, it is important to maintain group dynamics throughout the duration of the study, an indication of the effectiveness of the group process.

**Strengths of the Study**

The most important strength of this CBPR study was that all three major aims were met. A community advisory board was developed, the content for a cultural competency education tool in collaboration with the researcher was developed, and the effectiveness of CBPR group process was evaluated. In addition to meeting the aims set for this study, an added strength of this study was that it was also comparable with the newly established simulation design standards, as presented in the next section.
Simulation Design Standards

There are 11 factors to consider when designing simulation for optimal outcomes (Lioce et al., 2015). In this section, each factor is presented and then compared to this study. It is important to note that this study was designed prior to the publication of the simulation design standards, further supporting the credibility of this study.

Needs Assessment

Needs assessment provides evidence of the need for a well-designed simulation experience, and the result of the needs assessment guides the designer in developing goals or objectives for the simulation (Lioce et al., 2015). There was a thorough needs assessment done before determining the need for the simulation activity. In the literature review, it was clear that cultural competency simulation experiences lacked specific design. Additionally, the need for a Puerto Rican case was established based on the evidence of health disparities seen in the Puerto Rican population. Cultural competency education focusing on population groups with health disparities is needed as health disparities continue to increase in the U.S.

Measurable Objectives

Measurable objectives are determined from the needs assessment that drives the design and approach for simulation experience (Lioce et al., 2015). The simulation case in this study was designed with a clear objective; this objective was to increase the cultural competency level of undergraduate nursing students in caring for a Puerto Rican patient with type 2 diabetes. A scoring system is designed within the simulation experience to measure student’s level of performance.
Format of Simulation

The simulation format should be based on needs assessment findings taking into account participants, purpose, theory and modality (Lioce et al., 2015). This criterion of the established standard is also met in this study; since the simulation case was designed based on a needs assessment. A conceptual framework for designing Cultural Competency Simulation Experiences (CCSE) was developed, which guided the content development in OVIS program. The Puerto Rican case was designed for nursing students, with the purpose of developing their cultural competency level in caring for Puerto Ricans in NYC.

Clinical Scenario or Case

Developing a simulation case provides context for the simulation experience, which may include a situation, background, clinical progression, cues, time frames, script and critical actions (Lioce et al., 2015). This study included a simulation case, and the details of the case were included in the simulation design. There is progression planned in the scenario, where the students will have to complete OVIS step by step, and must achieve a certain level of mastery before the case can progress to the next stage of the simulation. There is consistency in the OVIS design because it provides each student with the same experience, so the measurement of reliability is possible.

Fidelity

Fidelity in the simulation is the perception of realism, allowing participants to engage and is of three types: 1) Physical fidelity is related to the physical context of the simulation, for example, the simulator, environment, and participants. 2) Conceptual fidelity refers to the relationship of elements with each other, for example, vital signs finding consistent with the
disease condition. 3) Psychological fidelity relates to contextual elements found in clinical environments like patient’s voice and presence of a family member (Lioce et al., 2015). The scenario is built in such a manner that there are real interactions designed with the virtual patient. These interactions include a cultural assessment of the patient, and clinical situations where culturally competent decisions must be made by the nursing student. There is conceptual fidelity evident as all aspects of the simulation were interrelated, and the case was reviewed by subject matter experts, and feedback was incorporated. Additionally, there is also a presence of the family member in the case scenario.

**Facilitator/Facilitative Approach**

Use of a facilitator in the simulation is based on participant’s knowledge and experience; the lesser the knowledge, the more is the use of a facilitator (Lioce et al., 2015). In the OVIS case, there is feedback and built in scoring. It is possible to add a virtual instructor in the OVIS program who may prompt and cue the learners towards the right direction and give verbal feedback during the progression of the case.

**Briefing**

Briefing in simulation includes preparation before entering a simulation experience based on planned objectives. Some examples include: orientation to simulator, method of evaluation, roles, time allotment, and limitations (Lioce et al., 2015). In the OVIS design before entering the simulation case, students have to develop knowledge on the common health care beliefs and practices of Puerto Ricans, which sets the stage for interaction with the Puerto Rican patient in the scenario. It enables the students to develop cultural knowledge that is required before interacting with the Puerto Rican virtual patient.
Debriefing/or Feedback

Debriefing refers to reflecting back on the experiences, and feedback is an evaluation of the performances in simulations; a planned debriefing and feedback session enriches learning and provides consistency for participants and facilitators (Lioce et al., 2015). Feedback in the form of numerical scoring is designed within the case. In the self-reflection section of the simulation, four self-debriefing questions were designed. These questions were rated by the content experts and were revised per their feedback. These questions focused on reflecting back to the experience and writing their perceptions and feelings about caring for a patient that is culturally different from the student’s culture.

Evaluation

Evaluation refers to ensuring quality and effectiveness of outcomes and includes formative, summative and high stake evaluations (Lioce et al., 2015). The OVIS content was formatively evaluated as the cultural experts critiqued the simulation case. In the actualization and testing of the OVIS in the future, there will be further evaluation of its effectiveness on the cultural competency levels of the students. The effect of OVIS can be further evaluated for student learning outcomes and its impact on the clinical practice and patient outcomes, which are considered high stake evaluations.

Participant Preparation

In the design phase of simulation, the inclusion of participant preparation addressing knowledge, skills, attitudes, and behaviors should be determined (Lioce et al., 2015). In OVIS, all learners have to first complete a cultural self-assessment to identify personal biases, prejudices, and stereotypes before caring for a culturally different patient. Additionally, the
learners have to watch a video presentation of the common health care beliefs and practices of Puerto Ricans and take a cultural knowledge 7-item quiz, before entering the simulation case.

**Test of the Design**

Upon completion of a simulation design, there should be pilot testing for effectiveness (Lioce et al., 2015). The future plan for the OVIS Puerto Rican case includes pilot testing to determine any elements or areas that need to be addressed prior to using it on a large scale with multiple participants. In addition, the actualization and operation faces of OVIS will require pilot testing to improve the scenario.

**Study Limitations**

There were some limitations noted in this study. The average attendance for each meeting was six to seven members, out of nine expected members. The reason for absence was primarily due to family and personal commitments that occurred. The meetings were conducted monthly and were planned in advance at least thirty days; however, there were still absences noted during each meeting. The decreased attendance might have contributed to missing of important information and perspectives that the entire board members could have contributed.

A total of four locations were used for the meetings, during this study. This may have contributed to travel changes and adjustments to newer locations. The original plan was to use two locations (one for the *cultural group* and another for the *clinical-educational group*) convenient for the members to travel, but there were undue circumstances beyond the researcher’s control that demanded location changes. One being a change in leadership and the second related to safety concerns due to ongoing street protests. Some members were able to
assist with content development remotely, through email. However, there was a lot of live interaction which occurred during the meetings in which they were unable to participate.

**Study Implications**

In the field of nursing education, the use of a CBPR approach for designing educational programs for cultural competency of nurses is minimal. Therefore, findings from this study suggest the use of CBPR methodology in designing virtual simulations for cultural competency in caring for vulnerable populations, and it adds new knowledge to the field of nursing education. The use of virtual simulations in nursing programs is growing (Consorti et al., 2012; George & Zary, 2014; Kidd, Knisley, & Morgan, 2012; McGee, n.d; Randon et al., 2011; Smith & Silk, 2011). The content for the OVIS program was developed with the input of Puerto Rican community members that included cultural, clinical and educational experts. The community input received in CBPR studies may result in effective educational programs. The findings from this study generated knowledge that is useful in health sciences with its applicability across other professions. With the expansion of distance learning programs in nursing education, innovative teaching methods to instill cultural competence in nursing students are needed (Arbour, Kaspar, & Teall, 2015). This study presents programs like OVIS as a solution for developing cultural competency of distance learning students. There is much progress noted in the use of technology in nursing education to directly and indirectly improve patient care (Krau, 2015); however, there is a need to study the effectiveness of the use of technology on patient outcomes. Using a CBPR approach for developing educational tools holds the possibility of a positive impact on the vulnerable population of interest. Such CBPR partnerships enable the community to have voice in nursing education, which may help improve the care of vulnerable populations. This study
focused on the Puerto Rican population of New York City, and using a CBPR approach by having cultural, clinical and educational experts, gave the opportunity for the Puerto Rican community to be involved. Such community partnerships and involvement enabled the development of educational content for cultural competency. This study can be replicated to develop cultural competency simulation experiences for nurses and other health professionals. It can develop their cultural competency skills in caring for significant populations with health disparities residing in a particular geographical area where they will practice or are practicing.

This study is significant and has wide application across health professions. The finding from this study also highlights the need for curricular revisions to be geared towards health disparities of the population served. This research was focused on undergraduate nursing students but can be replicated for practicing nurses and other healthcare professionals. Findings from this study contribute to the science of virtual learning and the need for involvement of stakeholders in the development process of developing educational tools. In this study, only one disease condition was addressed, and it should be replicated to focus on other disease conditions of health disparities among other population groups. Such educational tools can be effective in educating the health care workforce to focus on populations with health disparities as they involve their care.

**Future Recommendations**

The literature suggests that the CBPR method has been widely used in designing culturally tailored interventions for disease management in health sciences (Austin & Claiborne, 2011; Ayash et al., 2011; Gauld, Smith, & Kendall, 2011). In the literature, the use of a CBPR approach to developing effective culturally competent educational tools for health professionals
is limited. More studies need to be done in this field. Based upon the experience in conducting this CBPR study, there are some important recommendations to consider for future CBPR studies.

It is vital to recruit a large number of advisory board members who meet the set eligibility criteria and who are willing to invest their time in similar studies. There are chances that all members might not be able to physically attend monthly meetings due to the duration of CBPR studies and the commitment they require. It is also important to factor in extra time for the advisory board meetings as members can arrive late due to poor travel conditions and personal work situations. It is also recommended to have a backup location planned for meetings as undue circumstances may occur. Having consistency in the meeting location is also important because change in locations may cause travel difficulties for the CAB members.

The findings of a study done to assess the perceptions of public health nurses (PHN) regarding adopting CBPR into clinical practice to reduce health disparities showed that PHN lacked feeling competent in using the CBPR approach. The study recommended continuing education for PHN’s to develop necessary skills for working with communities (Catherine, 2010). The findings from this study call upon nurse educators to conduct more CBPR studies for educational purposes related to engaging the community to change clinical practice to decrease health disparities.

This study was not grant funded, and therefore, the method of doing 90-minute meetings once a month with dinners was a costly endeavor. For better cost effectiveness, longer duration of meetings with meals and travel compensation to board members is recommended. For developing OVIS content, the total number of hours that the community advisory board met was
seven meetings averaging ninety minutes each, which is around ten and half hours for the entire content development. This could be accomplished in a shorter time frame with better attendance. Also, there was much wastage of food due to the lower attendance in meetings. Therefore, it is recommended that content be developed in a shorter period with compensation to the board members. There were two members who worked remotely from Puerto Rico and offered feedback only via emails. The content to be critiqued and the guidelines were emailed to them and they sent their feedback through emails. Some other members also provided feedback over emails when they could not attend the meetings.

**Future Use of the Developed Script**

The developed simulation script using the CBPR process will guide the development of an online virtual interactive simulation case. The OVIS Puerto-Rican case will be pilot tested with nursing students from NYC and will be evaluated for efficacy. Based on the pilot study findings, the OVIS case will be used in a larger study and the cultural competency levels of the students in caring for Puerto Ricans post OVIS experience will be further evaluated. The advisory board members will be notified of the progress of OVIS, and the researcher will stay in touch with all members. As this study progresses in the future, CAB members are willing to continue participating in the study as needed.

**Conclusion**

Developing educational content using CBPR in nursing is crucial as it has the potential to affect patient outcomes. With the need for patient-centered care, it is necessary to place attention and care for individuals keeping their cultural beliefs and practices in mind. However, it is important to pay attention to the educational preparation of health professionals related to
developing cultural competency skills. Such a study adds new knowledge to the science of cultural competency education using technology for promoting culturally congruent care. The insights gathered from this study are valuable for developing cultural competency educational tools focusing on the care of vulnerable populations and have wide application in health sciences. Such educational tools can assist health professionals to provide culturally competent care to vulnerable populations with known health disparities in a specific geographical area and may contribute to decreasing health disparities both nationally and globally.
APPENDIX A:

OVIS SCRIPT DEVELOPMENT PROCESS AND ROLES
<table>
<thead>
<tr>
<th>Steps of Framework</th>
<th>Simulation Activity</th>
<th>Resources</th>
<th>Researcher Contribution</th>
<th>CAB(Cultural Group Contributions)</th>
<th>CAB (Clinical-Educational Group Contributions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Self-Awareness</td>
<td>Complete self-assessment of cultural beliefs</td>
<td>Cultural Competence Health Practitioner Assessment (CCHPA) (American Nurses Association, 2014)</td>
<td>Obtain permission to link online free assessment CCHPA to use in OVIS</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>
| Cross-Cultural Knowledge & Feedback | Complete Cross-Cultural Knowledge Section of the simulation. | Literature on health beliefs and practices of Puerto Ricans in NYC derived from multiple published resources (Purnell, 2013). | Develop a 10-15 minute video content on health beliefs and practices of Puerto Ricans.  
Write 7 test-items, multiple choice quiz, testing knowledge of Puerto Rican health beliefs and practices and scores | View the presentation and offer suggestions through answering the following questions using  
1. Does the content of the presentation represent Puerto Rican health beliefs practices?  
2. What needs to be included in the slides?  
3. What information should be deleted on the slides? | View the presentation on Puerto Rican health beliefs and practices and review the posttest items.  
Rate each item as Acceptable, Unacceptable, Needs revision  
(Include Suggestions for revision)  
Suggest scoring framework. |
| Cross-Cultural Experience & Feedback | I. Complete Cultural Assessment on the virtual patient.  
II. Make cultural competent nursing clinical decisions in 5 clinical situations. | Utilized questions from Purnell’s Model  
Use Leininger’s Sunrise Model citation to guide the decision making process. | Developed electronic script (a presentation of cultural assessment questions) | Developed patient responses to the cultural assessment questions | Reviewed the cultural assessment script and suggested scoring for student performances.  
Reviewed the clinical situations and suggested scorings of student performances.  
Rated each clinical situations as Acceptable, Unacceptable, Needs revision and Suggestions for revision. |
APPENDIX B:

PRESENTATION ON COMMON HEALTH CARE BELIEFS AND PRACTICES OF THE PUERTO RICANS
Common Health Beliefs and Practices of Puerto Ricans

- The island of Puerto Rico is located between the Caribbean Sea and the North Atlantic Ocean.
- San Juan is the capital and is the biggest Caribbean harbor.
- Puerto Rico was ceded to the United States as a result of Spanish-American war in 1898.
- Puerto Ricans were granted U.S citizenship in 1917 through the Jones Act.
- In 1952, Puerto Rico became a commonwealth.

(CIA World Fact Book, 2011)

Overview
• Puerto Ricans are the nation’s second largest Hispanic origin group, over 3 million living in the continental U.S mainland.

• New York City contains the largest Puerto Rican population (298,921 in Bronx County NY) in the mainland U.S.

(Motel & Patten, 2012)

Population

Puerto Ricans self identify as:

• Puertorriqueños.

• Boricuas (Tano Indian)

• Niuyoricans (Born in New York).

(Purnell, 2013)

Puerto Ricans
• Puerto Ricans have 94% literacy rate in Puerto Rico

• Puerto Ricans have a high secondary school drop rates in U.S mainland (National Center for Health Statistics, 2011)

• High School Completion rates are only 76.6% and college degree is held by only 16.5% (U.S Census Bureau, 2009).

Educational Status

• The mean annual income for Puerto Ricans was $16,000 compared with the overall income of $47,400 in 2010 (CIA World Fact, 2011)

• The percentage of Puerto Rican families living below the poverty line is greater than other Hispanic/Latino populations in the U.S (National Center for Health Statistics, 2011)

Income
• Puerto Ricans migrate to the mainland U.S for decades for the following reasons:
  - Seek Employment
  - Education
  - Better quality of life
  - To escape increased sales tax (11.5%) (The Associated Press, 2015)

**Immigration**

• Migrant Puerto Rican population: Spanish is the Primary Language.

• U.S born Puerto Rican population: English is the primary language.

**Communication**
• Value interpersonal interaction

• Sympatico: Is a cultural script in which individuals is perceived as likeable, attractive and fun-loving

• Enjoy conversing with friends and sharing information about their families, heritage, thoughts and feelings

• Personalismo: Personal relationships are valued over impersonal and bureaucratic relationships.

**Cultural Communication Pattern**

• Openly express physical ailments and discomforts except issues related to taboo topics like sexuality.

• Confianza: Trust should be established using open communication with individuals and family

• Personal space may be an issue. Example: Older women may prefer greater distance from men.

• U.S born Puerto Ricans are less self-conscious regarding personal space.

**Cultural Communication Pattern**
• Very expressive, use many body movements.

• Feelings and emotions are expressed through touch

• Are Carino, which is loving and caring in verbal and non-verbal ways

• Greeting with a gentle hug is seen in a trustful relationship.

• During conversations a gentle hand stroke on the shoulder may sign love and affection

Cultural Communication Pattern

• Puerto Rican women may greet with a strong hug and a cheek kiss.

• Non-verbal communication may include a head nod with “aha” response.

• Also chin lift may be used to point towards a particular individual.

• May prefer to read or share sensitive information regarding health, options and decisions with family members

• Verbal approval from extended family or community members who are knowledgeable in health may be obtained.

Cultural Communication Pattern
• Discussions on topics related to sex, sexual orientation, and sexually transmitted infections, should be built around confianza and personalismo.

• When discussing sensitive issues, variables like voice volume, tone, eye contact, spatial distancing, and time are important.

**Cultural Communication Pattern**

• It is crucial to demonstrate respect in communication
  • Señor and Señora for adults
  • Titi or Tío for aunts and uncles
  • Madrina and Padrino for godmother and godfather
  • Usted, Don, Doña.
  • Nicknames: Pappa, junior, tito etc..

**Name Formats**
Puerto Rican Women

• Traditionally women were expected to be of a submissive nature, man pleaser, respectful and obedient.

• Women currently play a central role in the family and community. They are independent, self-sufficient and may serve as a primary provider for the family.

• Puerto Rican women now join politics and are increasingly active in the workforce.

Family Roles and Organizations

Puerto Rican Men:

• Traditionally Machismo, a sense of masculinity and display of physical strength and bravery was expected.

• Men were expected to play a dominating role.

• With emerging role of women having equality with men, a dominating role is diminishing.

Family Roles and Organizations
Children & Adolescence

- Familism, which is respecting the elders is emphasized.
- Children are expected not to contradict, argue or disagree with their parents.
- U.S born adolescents seek independence and struggle between the traditional and contemporary family values.
- Teen pregnancy, substance abuse, delinquent behaviors, depression have been associated with cultural conflicts.

(National Coalition of Hispanic Health and Human Service Organizations, 1999)

Family Roles and Organizations

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Children & Adolescents

- Many families believe that a healthy child is one who is gordita or llenito (overweight) and may be perceived as evident of physical and financial wealth.
- Young mothers are encouraged to add cereal, egg and viandas (starchy tropical root) in their infant milk bottles.

Family Roles and Organizations

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Children & Adolescence

- Some families abide by cultural prescriptions that encourage sexual activity before marriage (tener relaciones), extra marital sexual activity and men to have control over sexual relationships (Orshan 1996).

- Traditionally girls were socialized to be modest, respectful and submissive to men (mantanismo).

- With acculturation girls are more assertive, independent and outspoken.

- Issues of menstruation, birth control, impotence, sexually transmitted infections and infertility are rarely discussed.

Family Roles and Organizations

Children & Adolescence

- Less educated families may have difficulty educating women about sexuality and reproductive issue.

- Most families expect children to stay home until marriage.

- The mother is expected to assume an active role in disciplining, guiding and advising children.

- Fathers are expected to be consulted in all family matters and serve as financial providers.

Family Roles and Organizations
Children & Adolescence

- Puerto Rican families are rigorous with their children’s discipline. Traditional punishment practices include:
  - Making a child who has lied to kneel on rice until the truth is told.
  - Washing the mouth vigorously with soap for using profanity.
  - Spanking the buttocks or lower extremity with belt.
  - Also threats to punishment, guilt, and discipline create stress for adolescents as they deal with more permissive cultural patterns in the United States.

Family Roles and Organizations

- Family unity is highly valued
- Family structure can be nuclear or extended
- Children post marriage are expected to maintain very close ties with their families
- Daughters are preferred as caretakers when parents are aged.
- Close and extended family members are expected to participate in the care of their children
- Grandparents play an active role in rearing grand children

Family Roles and Priorities
• Older women gain increased status, have covert power over spouses, children and family

• Dependent older adults live with their children and are cared for emotionally and financially

• Placements in nursing homes and extended care facilities may be seen as inconsiderate of older people

• Families that use such organizations may feel guilty and experience depression and distress

• Health care professionals should be sensitive to these issues and explore alternatives

Family Roles and Priorities

• Family, friends and neighbors are expected to visit during hospitalizations

• A family member is culturally expected to be present at the bedside of a sick person

• Health care providers should ask the name of the family spokesperson and document it in the patient chart.

Family Roles and Priorities
Since early 1980’s Puerto Rican families have experienced an increased rate of pregnancy among teenagers and unmarried women (Purnell, 2013).

- There is an increase of women in the labor force, high divorce rates, increase in poverty and increase in number of households headed by women.

- Homosexuality is considered a taboo and carries a great stigma, often is undisclosed to avoid family rejection and preserve family links and support.

- With acculturation the trend is changing towards more acceptance of homosexuality in the Puerto Rican culture.

**Alternate Lifestyle**

In general, men and women adjust to the U.S. work environment due to similarities with the Puerto Rico.

Puerto Ricans are hardworking, like to be competitive, and make extended efforts to please their employers.

Puerto Ricans place a high value on their occupations, positions and businesses and strive for higher performances even in the face of oppression.

**Workplace Culture**
- Most Puerto Ricans are hardworking and value personal relationships at work.

- Work is perceived as a place of social and cultural interactions.

- For many women, family responsibilities, pregnancy, and health of their children take priority over work.

**Workplace Culture**

- The Puerto Ricans are a mixture of Native Indians, Africans, and Spanish heritage.

- Diseases such as hypertension and diabetes are major illnesses both in Puerto Rico and US Mainland.

(Purnell, 2013)

**Biocultural Ecology**
• The leading cause of death is heart disease, malignant neoplasm, diabetes mellitus and AIDS (National Alliance of Hispanic Health, 2011).

• In the U.S mainland, there is high incidence of chronic conditions such as mental illness among young adults; cardiopulmonary and osteo-muscular disease among the elderly.

• Among the women high incidence of obesity increases the risk of mortality due to diabetes.

**Diseases and Health Conditions**

• Alcoholism, smoking, illicit drug use, physical inactivity, poor dietary practices, sex-related behaviors, and underutilization of preventive health-care services.

• Alcoholism is a precursor of increased unintentional injuries, family disruption, spousal abuse, and mental illness among Puerto Rican families (Center for Disease Control, 2008).

**High Risk Behaviors**
• Puerto Ricans celebrate, mourn and socialize around food.

• Food is used to honor, recognize visitors, friends and family members.

**Nutrition**

**Breakfast**
• Coffee with milk
• Hot cereal (oatmeal)
• Cornmeal
• Rice cereal cooked with vanilla, cinnamon sugar, salt and milk
• Farina
• Bread and butter
• Fresh bread loaf.

**Common Food Practices**
Lunch & Dinner

- Rice and stew
- Rice & Beans (pink, large red, white and pinto).
- Rice with vegetables
- Pork meat
- Arroz guisado (rice stew), seasoned with sofrito (blend of spices like cilantro, onions, green peppers)
- Rice can be cooked with chicken, pork, codfish, calamari or shrimp
- Corn with several types of beans

Common Food Practices
- **Holiday Specials**
  - Rice with gandules, pernil asado (roasted pork) and pasteles made with root vegetables, green plantain, bananas or condiments filled with meat and wrapped with plantain leaves
  - Variety of pastas, bread, crackers, vegetables and fruits
  - Tostones, fried green or ripe plantains and a favorite side dish
  - Most common viandas (roots) eaten with Cod fish, celery roots, sweet potatoes, dasheens, yams, breadfruit, breadnut, green and ripe plantains, green bananas, tanniers, cassava and chayote
  - Alcupunia (Yuka with ground beef inside).

**Common Food Practices**

- Body is considered sacred and guarded with respect
- Death rituals are based on religious beliefs
- Burial rituals extend until all close family members are present
- A person close to the deceased person can organize funeral arrangements. It can be a family, friend or neighbor
- Family members visit the family for several days and weeks to support the mourning family and talk about the deceased
- Grief is expressed freely with loud cry
- There may be celebration of the deceased person, in the form of party, drinking, playing Dominos, Briscas (card game), serving hot chocolate with bread and speaking about the person.

**Death Rituals**
• About 85% of Puerto Ricans are Catholics and remaining are evangelicals/protestants

• Few practice Espiritismo (a blend of native Indians, Catholic, and African beliefs), communication with spirits and evil forces

• Espiritistas, Santeria are individuals capable of communicating with spirits for promoting spiritual wellness and to treat mental illnesses.

Spirituality

• Have a curative view of health and underuse preventative services

• Natural herbs, teas, over-the-counter medications are often used as initial interventions for symptoms

• Many consult family and friends before consulting health-care provider

• Organ donation may be seen as a good act

• Autopsy is seen as violation.

Health Care Practices


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