A cultural competency training model for the public health workforce: public health cares

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ABSTRACT

A CULTURAL COMPETENCY TRAINING MODEL FOR THE PUBLIC HEALTH WORKFORCE: PUBLIC HEALTH CARES

Hana E. Hinkle, Ph.D.
College of Health and Human Sciences
Northern Illinois University, 2018
Derryl Block, Director

Cultural competency training (CCT) programs are often used to train healthcare providers on the cultural needs and related healthcare disparities of patients. However, the current literature does not provide standardized best practice methods for CCT implementation, and CCT content is not consistent within healthcare disciplines and/or across disciplines (Beck & Boulton, 2012; Betancourt, Green, Carrillo, & Owusu Ananeh-Firempong, 2016; Crandall, George, Marion, & Davis, 2003; Lie, Lee-Rey, Gomez, Bereknyei, & Braddock, 2011). Additionally, current training programs do not typically address other factors of culturally appropriate care delivery in practice, such as provider bias. Current training programs also lack evaluation standards to effectively assess CCT interventions. The purpose of this research was to develop, pilot and evaluate a CCT training program. This research was completed in multiple phases and included the development of an assessment tool for the training, testing the validity and reliability of the assessment tool, implementing a newly developed CCT intervention and assessing the effects of the CCT related to the knowledge/awareness and attitudes/engagement of participants.
NORTHERN ILLINOIS UNIVERSITY
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A CULTURAL COMPETENCY TRAINING MODEL FOR THE PUBLIC HEALTH WORKFORCE: PUBLIC HEALTH CARES

BY

HANA E. HINKLE
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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
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Doctoral Director:
Derryl Block
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Finally, I would like to acknowledge and thank my family including my husband, parents and grandparents. Although my grandparents are no longer with us, their influence is always with me.
DEDICATION

This dissertation is dedicated to my husband, Colin Lindell Peterson who has always believed in me, sacrificed for me and helped see me through the most challenging of times. I would not be who I am today without his guidance, stability, love, and constant support. To my parents, William B. Hinkle and Juanita Hinkle. I cannot think of two people who have supported and sacrificed more for their daughter. In anything I do in life, I try to make their sacrifice worthwhile. Thank you for teaching me resilience and perseverance to overcome barriers. This dissertation is also dedicated to people like my grandparents, Simon and Anita Olalde, who worked in fields and factories to not only survive, but to support a better life and future for their family. Finally, this dissertation is dedicated to the frontline healthcare providers such as public health workers, who work tirelessly to improve the healthcare of diverse and other vulnerable populations.
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CHAPTER 1

INTRODUCTION

Significance of the Problem

Cultural competency training (CCT) programs are often used to train healthcare providers on the cultural needs and related healthcare disparities of patients. However, the current literature does not provide standardized best practice methods for CCT implementation, and CCT content is not consistent within healthcare disciplines and/or across disciplines (Beck & Boulton, 2012; Betancourt, Green, Carrillo, & Owusu Ananeh-Firempong, 2016; Crandall, George, Marion, & Davis, 2003; Lie, Lee-Rey, Gomez, Bereknyei, & Braddock, 2011). Additionally, current training programs do not typically address other factors related to culturally appropriate care delivery in practice, such as provider bias. Current training programs also lack evaluation standards to effectively assess CCT interventions.

Although various CCTs have demonstrated an increase in awareness of general constructs of culture among specific disciplines (e.g. physicians), a standardized training model across disciplines is needed (Betancourt et al., 2016). One of the most understudied categories of healthcare workers in terms of cultural competency is those in public health. These workers often serve in a local public health department as part of the healthcare system within a community. Given that many public health workers serve as front-line healthcare providers in
underserved communities, public health workers are responsible for addressing the healthcare needs of disparate populations. However, most public health workers do not have formal training in addressing health disparities or in cultural competency (Beach et al., 2005). A lack of training and education can translate to poor interactions between public health workers and the patients/clients they serve.

In terms of CCT, if not implemented appropriately, these training programs may actually promote biases (Stone & Moskowitz, 2011). Current CCT programs tend to overgeneralize cultures which can further lead to stereotyping of racial differences (Stone & Moskowitz, 2011). It has been suggested that research on CCT should include the integration of bias reduction strategies (Burgess, Van Ryn, Dovidio, & Saha, 2007). It is important that new training models work to reduce, and not promote, stereotypes and bias and include bias reduction strategies. The inclusion of bias reduction is key in this dissertation project.

Background

The literature suggests many methods to promote culturally appropriate healthcare. One strategy involves the recruitment of underrepresented minority healthcare providers to work in underserved practice settings. Providing interpreter/translator services in a healthcare environment is an additional suggested method to address culturally related healthcare needs (Betancourt et al., 2016). CCT is a common method used to improve culturally appropriate care delivery across all healthcare provider types (Bahrke, De Oliveira, Scheel, Beck, & Hopp, 2014; Betancourt et al., 2016; Campinha-Bacote, 2002). In general, the goal of CCT is focused on increasing providers’ knowledge and awareness of concepts related to the general cultural characteristics of racial/ethnic minority populations (Betancourt et al., 2016).
The Influence of Bias on Cultural Appropriate Healthcare Delivery

Studies have demonstrated a link between a healthcare provider’s bias towards disparate populations and how he or she delivers healthcare (Blair et al., 2013; Hall et al., 2015; Oliver, Wells, Joy-Gaba, Hawkins, & Nosek, 2014; Van Ryn & Saha, 2011). More research is required to better understand how to mitigate the effects of bias, both explicit and implicit, of healthcare providers. In addition, the majority of the research conducted on bias in a healthcare setting has been focused on clinical and not on preventive service settings, such as a local health department.

Implicit Bias

Implicit bias is the attitudes and stereotypes that affect our “understanding, actions and decisions in an unconscious manner” (Kirwain Institute, 2015, para. 2). Implicit bias is developed through preconceived notions (that the individual possessing the bias is not conscious of) about groups of people (Fitzgerald & Hurst, 2017). This type of bias can “lead to a negative evaluation of a person on the basis of irrelevant characteristics such as race and gender” (Fitzgerald & Hurst, 2017, p. 2). In the context of healthcare, the consequences of implicit bias can negatively impact patients. Hall and colleagues (2015) noted that as a result of implicit bias, “patients of color may be kept waiting longer for assessment or treatment than their White counterparts, or providers may spend more time with White patients than with patients of color” (p. 61). In their 2015 systematic review of the literature, Hall and colleagues concluded that most White healthcare providers have implicit bias regarding race by demonstrating positive views of Whites over racial minority groups.
Treatment recommendations can differ among patients with the same health condition based on a provider’s perceptions of patient compliance (Green et al., 2007). Van Ryn and Burke (2000) found that patient race was associated with physicians' assessment of patient intelligence, feelings toward the patient, and beliefs about patients’ likelihood of risky behavior and adherence with medical advice; patient socio-economic status was associated with physicians' perceptions of patients' personality, abilities, behavioral tendencies and role demands. (p. 813)

The influence of patient race on a provider’s behavior can extend beyond assumptions of patient adherence/compliance and lead to overtly negative patient-provider interactions. Maina, Belton, Ginzberg, Singh, and Johnson (2018) conducted a systematic review of the literature over a 10-year period that examined the influence of implicit bias in the healthcare setting. Although their review concluded that there is variability regarding the degree to which implicit bias alone impacts the continuation of persistent health disparities, they determined that implicit bias exists as one part of multiple factors that influence disparities.

Patient-Provider Communication and Bias

Communication can be affected when implicit bias exists within the context of a patient-provider interaction. According to Cooper and colleagues (2012), “clinician implicit race bias and race and compliance stereotyping are associated with markers of poor communication and poor ratings of care, particularly among Black patients” (p. 979). Poor communication during visits and lack of trust can lead to poor patient satisfaction (Farley et al., 2014; Fondacaro, Frogner, & Moos, 2005). Patients who are less satisfied with their healthcare relationship with their providers are also less likely to adhere to treatment (Bean, Covarrubias,
& Stone, 2014; Fondacaro et al., 2005). This is of concern because poor treatment adherences (and/or preventive service recommendations) are often associated with poor health outcomes (Dehon et al., 2017). Collaboration between a patient and a provider can support the communication required for successful patient satisfaction. However, providers may vary based on the patients’ characteristics, in the extent to which they collaborate with patients when considering treatment (Green et al., 2007; Van Ryn & Burke, 2000), which may further impact patient satisfaction and outcomes.

Theoretical Framework: Social Cognitive Theory

Factors of culturally appropriate healthcare delivery are associated with provider attitudes towards diverse patient/client panels (Devine, 1989). Prejudicial attitudes in any setting can be related to a group’s influence on an individual (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, Jackson, Dunton, & Williams, 1995). This is of particular significance in a healthcare setting where a provider’s attitude toward patients may be influenced by attitudes of their colleagues or co-workers. If prejudices exist in the context of the group practice environment, then these attitudes are likely to be adopted by an individual. There are many complexities involved in the mediation of group influences on individual providers in a healthcare setting.

The Social Cognitive Theory (SCT), first introduced by Bandura (1989), is a theoretical framework that describes the phenomenon of how certain group-related factors influence individual behavior. The “Social Cognitive Theory subscribes to a model of emergent interactive agency. Thoughts are not disembodied, immaterial entities that exist apart from neural events. Cognitive processes are emergent brain activities that exert determinative
influence” (Bandura, 2001, p. 4). The SCT explains that the cognitive processes of an individual, including knowledge and attitudes, are influenced by social norms and related experiences. This theoretical perspective assumes that individuals can learn to adapt or change their perspectives based on modeling of the behaviors of others in their environment. Individual decisions can be made based on how an individual perceives environmental support to engage in specific behaviors/actions. Changes in an individual’s behavior can also be encouraged by a personal sense of control or self-efficacy (Schwarzer & Luszczynska, 2005). According to Schwarzer and Luszczynska (2005), “If people believe they can take action to solve a problem instrumentally, they become more inclined to do so and feel more committed to the decision” (p. 128).

Social Cognitive Theory in Healthcare

Research has demonstrated that the SCT can be applied to many disciplines including the health professions (Bandera, 1991; Burgess et al., 2007; Godin, Bélanger-Gravel, Eccles, & Grimshaw, 2008; Ormrod, 2011). Burgess and colleagues (2007) noted that “promising evidence in social cognitive psychology indicates that with sufficient motivation, cognitive resources, and effort, healthcare providers are able to focus on the unique qualities of individuals” (pp. 882-883). Therefore, the SCT demonstrates how provider perspectives of patients are developed. Further, this theory can describe a healthcare provider’s perspective on culturally appropriate care.
Application of the SCT in Cultural Competency Training Model

The SCT can be applied to the framework of a CCT. Specifically, the SCT describes that people often learn through observation, behavior can be self-regulated, and cognition is influenced by motivation-based factors (Ormrod, 2011). Burgess and colleagues (2007) developed strategies to address these assumptions in the context of an education/training intervention model. These strategies include

1) enhance internal motivation to reduce bias, while avoiding external pressure; 2) increase understanding about the psychological basis of bias; 3) enhance providers’ confidence in their ability to successfully interact with socially dissimilar patients; 4) enhance emotional regulation skills; and 5) improve the ability to build partnerships with patients. (Burgess et al., 2007, p. 882)

These strategies, along with theory related to bias reduction and cultural competency training, have been included in the development of a new model that aims to describe a comprehensive approach to culturally appropriate healthcare delivery (see Figure 1). This model aims to describe the mechanism by which cultural competency training that is designed to address key factors of culturally appropriate healthcare delivery, including bias, promotes an increase in knowledge/awareness and attitudes/engagement to positively interact with diverse patient populations. Ultimately, the goal of this model is that increased culturally appropriate healthcare by culturally competent healthcare providers can improve patient satisfaction promote positive health outcomes among diverse populations. The first component of the model, related to CCT, was studied as part of this dissertation.
Cultural Competency Training (Health disparities, implicit bias, and structural racism)

Increase of cultural awareness (knowledge)

Increase knowledge of issues impacting racial minority populations

Activation of motivations to improve care delivery

Enhanced Provider self-efficacy and skill development

Increase Patient Satisfaction

CONTEXT: Implicit bias-related disparity reduction

Decrease in activation of implicit bias (attitudes)

Improved compliance with provider recommendations regarding preventive services

Figure 1. Proposed Culturally Appropriate Healthcare Delivery Model
Research Overview

Purpose

The purpose of this research was to develop, pilot and evaluate a CCT training program. This research was completed in multiple phases and included the development of an assessment tool for the training, testing the validity and reliability of the assessment tool, implementing a newly developed CCT intervention and assessing the effects of the CCT related to the knowledge/awareness and attitudes/engagement of participants.

Methods

This research involved multiple components. The first component was the development of the assessment tool. The second component was the development/implementation of a training model. The third component was the pre and post evaluation of the intervention. Data from a previous project that included extensive review of CCT programs informed the development of the training model (Hinkle, 2018). In the previous project, along with a colleague, I conducted a literature review on CCT and interviewed key informants of 44 CCT training programs regarding content and delivery of training modules (Hinkle, 2018). Through this process, four distinct but related CCT modules were identified based to be useful to include in the development of the CCT based on relevant content and overall accessibility. These modules focused health disparities, structural racism and implicit bias (Blair et al., 2013; Georgetown University, n.d.; Grainger-Monsen, Haslett, Green, Betancourt, & Carrillo, n.d; University of Albany, 2015).

Development of the Assessment Tool
The development of an assessment instrument was done in response to identified gaps in the CCT literature. I developed a new tool to address CCT that would include bias reduction strategies. The new instrument, the Public Health Cultural Appropriate Readiness and Engagement Score (Public Health CARES) Tool, was designed for the assessment of the studied intervention. The Public Health CARES Tool was designed with components from multiple assessment tools and surveys they have been previously implemented in similar research settings for similar interventions. In addition, select demographic and other characteristic questions were included in the Public Health CARES Tool.

Implementation of the Training

The CCT was piloted on public health workers in one state. The pre intervention assessment was completed prior to the start of the CCT. After all modules of the online CCT intervention were completed, participants were then prompted to complete the post intervention assessment. The pre and post intervention assessments included the same questions with one additional open-ended question in the post assessment that provided an opportunity to provide qualitative feedback about the intervention.

Research Questions

The five research questions for the proposed study were aimed at assessing the validity and reliability of the Public Health CARES Tool, measuring knowledge/awareness and attitudes/engagement of the participants before the training, and measuring change in participant knowledge/awareness and attitudes/engagement after the training.
Research question 1: What is the content validity of the Public Health CARES Tool?

Research question 2: What is the test-retest reliability of the Public Health CARES Tool?

Research question 3: What are the levels of knowledge/awareness and attitudes/engagement as measured by Public Health CARES scores among public health workers?

Research question 4: What is the influence of a CCT on knowledge/awareness and attitudes/engagement on participants using the Public Health CARES Tool?

Research question 5: What are the lessons learned from a pilot CCT for public health workers?

Hypotheses

Regarding research question 1, the hypothesis was that the proposed Public Health CARES Tool is a valid tool to measure knowledge/awareness and attitudes/engagement of participants. Regarding research question 2, the hypothesis was that the Public Health CARES Tool is reliable to measure knowledge/awareness and attitudes/engagement of participants. Regarding research question 3, the hypothesis was that generally levels of knowledge/awareness and attitudes/engagement of public health workers would be low in the pre assessment. The hypothesis for research question 4 was that the CCT would significantly influence knowledge/awareness and attitudes/engagement of participants pre to post intervention. Research question 5 was designed to be answered by a descriptive case analysis and did not have a hypothesis developed.
Study Design

The five related research questions included in this pilot study emphasized specific research designs. Pilot studies in general are “designed to test the performance characteristics and capabilities of study designs, measures, procedures, recruitment criteria, and operational strategies that are under consideration for subsequent studies” (Moore, Carter, Nietert, & Stewart, 2011, p. 332). This pilot study focused on identifying a proof of concept for increasing knowledge/attitudes and awareness/engagement of public health workers after implementation of the CCT and therefore did not include testing of the entire model included in Figure 1.

Validity and reliability testing were conducted on the Public Health CARES Tool prior to implementing the training intervention. Validity testing of the tool was completed using a one group non-experimental descriptive study for content validity. Reliability testing was conducted on a revised assessment based on feedback from the content validity testing. Test-retest reliability testing was done using a one-group test-retest design.

A one-group pretest/posttest design was used to assess the level of knowledge/awareness and attitudes/engagement as measured by Public Health CARES score among public health workers before and after the intervention. Finally, implementation of the training intervention was analyzed via case study methodology that included my self-reflections on the CCT intervention process and qualitative responses from study participants that completed the post assessment.
For the purpose of this research, race and ethnicity are factors that characterize minority status. The term minority is defined as, “a group within a community which has different national or cultural traditions from the main population” and can be used to describe both racial and/or ethnic minority populations (Oxford Dictionary, n.d.). Race refers to perceived unique common physical and biogenetic characteristics of a population whereas ethnicity refers to the identification of a group based on perceived cultural distinctiveness (language, music, values) (A. G. Johnson, 2000). In this research, the term racial/ethnic minority is used to identify populations that will be the focus of training content. This classification is supported by the American Psychological Association Sixth Edition Style Guide (American Psychological Association, 2016) to reduce bias in narrative writing by distinguishing the type of minority category.

Prejudice, structural racism, stereotypes and bias are familiar concepts in interprofessional research. Prejudice is defined as, “preconceived opinion that is not based on reason or actual experience” (Oxford Dictionary, n.d). Structural racism, a related term to prejudice, is defined as social, political and economic structures that contribute to the “vulnerability and ill health of individuals (University of Albany, 2015). Stereotypes, another key term, is defined as, “a widely held, but fixed and oversimplified image or idea of a particular type of person or thing” (Oxford Dictionary, n.d.). Stereotypes can lead to the creation of bias.

The Oxford Dictionary defines bias as “prejudices about one group by another” (Oxford Dictionary, n.d.) and defines prejudice as, “preconceived opinion that is not based on reason or actual experience” (Oxford Dictionary, n.d). It is important to note that bias can occur in an unintentional and even unconscious manner (Blair & Banaji, 1996). Unconscious bias may not
be apparent in everyday interactions between individuals of different backgrounds. This phenomenon can also be described as implicit bias (Devine, Forscher, Austin, & Cox, 2012). Reducing the activation of bias is a common goal of implicit bias studies. Activation of implicit bias can be defined as the degree to which individuals can control the effects of their bias (Devine, 1989). Motivation to control implicit bias will also be a key concept. Motivation to control the activation of bias is defined as an individual’s desire to consciously mediate the effects of their own biases (Devine, Plant, Amodio, Harmon-Jones, & Vance (2002). Bandura (1991), noted that establishing self-efficacy can also support controlling the activation of behaviors.

Chapter Descriptions

Chapter 2: Content Validity and Test-Retest Reliability Testing of the Public Health Culturally Appropriate Readiness and Engagement (Public Health CARES) Tool

The current tools used to evaluate CCTs are not generally publically available and are not designed for standardized evaluation across programs and disciplines. A new tool, Public Health CARES, was designed to address the gaps in current tools by combining five previously validated tools related to CCT programs. The Public Health CARES tool consists of a 21-item quantitative pre assessment and a 22-item post assessment that includes one additional qualitative question. Validity and reliability testing were completed on the Public Health CARES Tool. Content validity testing was done using a one-group non-experimental descriptive study. The study’s convenience sample included five experts that were identified from a previous study assessing CCT programs in the United States. The participants provided
qualitative feedback that was coded into relevant themes. The test-retest reliability testing was done using a one-group non-experimental design and was also based on a convenience sample of participants. Ten participants were recruited to participate in test-retest reliability, completed pre assessment tool, and 1 week later completed the post assessment tool. Results were analyzed using SPSS statistical software testing the Pearson’s Correlation Coefficient.

Chapter 3: The Effects of a Cultural Competency Training on Knowledge/Awareness and Attitudes/Engagement: Public Health CARES

There are a variety of scales that have been used to measure cultural competency, including knowledge and awareness of culturally appropriate care delivery. It is important to note that existing scales are often tied to specific cultural competency training programs that are not easily available or generalizable among various healthcare disciplines. Other tools and scales are aimed at measuring the cultural competency of specific types of health professions students, particularly nursing students. This study used a new tool, the Public Health CARES Tool, to measure the cultural competency of public health workers. A two-stage recruitment process was utilized with research site locations recruited through online recruitment fliers distributed to health department administrators who then could decide to share a link to the online training with their staff. A non-probability volunteer sample of local public health department employees in one Midwestern state included nurses, physicians, other clinicians, administrators and support staff were recruited to participant. Participants were asked to complete the CCT training intervention, based on a one-group pretest/posttest design, that included pre assessment, an online cultural competency training, and a post assessment. The Public Health CARES Tool was used for both the pre and post assessment.
Chapter 4: Practical Lessons Learned From Piloting the Public Health CARES Training Model

Cultural Competency Training has been identified as one way to promote the delivery of culturally appropriate healthcare. However, there are many differences in content and methods of delivery of CCTs. CCTs do not always meet the training needs of all healthcare disciplines, such as the public health workforce, that interact with diverse populations. The purpose of this case study analysis was to examine the development, implementation and evaluation of the Public Health Culturally Appropriate Readiness and Engagement Score (Public Health CARES) Training, a CCT that was specifically designed for public health workers. Seven modules were included in the CCT: introduction, pre assessment, four content-based modules (Personal Stories, Health Disparities, Structural Racism, and the Implicit Association Test), and a post assessment. These modules were bundled into a training online educational and training platform called Teachable. Beta testing of the CCT was completed by volunteers representing multiple sectors and education levels. Pre and post assessment results were analyzed.

Chapter 5: Summary of Findings

Research suggests that it is important for providers to adapt to the cultural needs of patients. Engagement of healthcare providers of all levels through training can work to improve patient/client satisfaction (Cooper & Powe, 2004; Fondacaro et al., 2005; R. L. Johnson, Saha, Arbelaez, Beach, & Cooper, 2004; Saha, Komaromy, Koepsell, & Bindman, 1999). Increased satisfaction by patients/clients can lead to improved health outcomes. Although CCTs are used to educate healthcare providers on the cultural needs of patients, more work needs to be done to
fully assess and address contributing factors that prevent culturally appropriate care delivery in practice—such as implicit bias. There is not a standardized evaluation tool for cultural competency across disciplines. This is especially an issue among public health workers that have been often excluded from published evaluation on cultural competency training programs in the literature.

This research was based on a model that I developed (see Figure 1). This model aims to describe the mechanism by which a particular CCT training that encompasses key factors of culturally appropriate healthcare delivery can be used to increase awareness and knowledge and thereby improve care to diverse populations. The ultimate goal of this model is to create a healthcare environment in which healthcare providers are more aware of the needs of their diverse patients, and patients are more satisfied with the care they are receiving which can contribute to better health outcomes for racial minority patients. This particular research concentrates on the first portion of this model. Additional issues in research methodology and implementation are discussed in this chapter.
CHAPTER 2

CONTENT VALIDITY AND TEST-RETEST RELIABILITY TESTING OF THE PUBLIC HEALTH CULTURALLY APPROPRIATE READINESS AND ENGAGEMENT (PUBLIC HEALTH CARES) TOOL

Abstract

The current tools used to evaluate CCTs are not generally publically available and are not designed for standardized evaluation across programs and disciplines. A new tool, Public Health CARES, was designed to address the gaps in current tools by combining five previously validated tools related to CCT programs. The Public Health CARES Tool consists of a 21-item pre intervention assessment and a 22-item post intervention assessment that includes one additional open-ended question. Validity and reliability testing were completed on the Public Health CARES Tool. Five content experts, identified from a previous study assessing CCT programs in the United States and through an affiliation with a AHEC program office, reviewed the pre and post tools. The participants provided qualitative feedback that was coded into relevant themes. None of the participants indicated that concepts were missing or inappropriately included in the tool. Ten participants were recruited to participate in test-retest reliability, completed pre assessment tool, and 1 week later completed the post assessment tool. Results of the test-retest reliability testing were analyzed using SPSS statistical software. The Pearson’s Correlation Coefficient was calculated to identify test-retest reliability. The test-
retest reliability coefficients ranged from .703 (acceptable reliably) to 1 (perfect reliability). The majority of the questions (N=21) indicated a perfect reliability coefficient. All reliability measures were significant at least at the .05 level. Therefore, the tool was found to be valid and reliable.

Significance of the Problem

Addressing the healthcare needs of diverse patient populations is becoming important in many disciplines. It is well documented that providers who lack knowledge of how to address disparities in health status among racial minority groups exacerbate factors contributing to poor health outcomes (Smedley, Stith, & Nelson, 2003). Health disparities can refer to differences in health status of populations based on racial/ethnic, socioeconomic, and other factors (Carter-Pokras & Baquet, 2002). Further, health disparities can be described as differences in treatment provided to members of racial or ethnic groups that are not justified by the underlying health conditions or treatment preferences of patients (Smedley et al., 2003). Cultural competency programs are often used to train healthcare providers on the cultural needs and related healthcare disparities of patients. However, there are research gaps in the best practices of culturally appropriate care delivery and cultural competency trainings (CCTs). There is also a lack of CCT training programs that target healthcare disciplines that directly interact with disparate population groups, such as public health workers. Finally there is a lack of literature about how to effectively measure evaluation standards in the measurement of outcomes.

There are many instruments/tools to evaluate the level of cultural competency among healthcare providers. However, these instruments/tools were not developed to evaluate all types of CCT programs. Specifically, the Public Health CARES Tool was developed to measure key
components of culturally appropriate healthcare delivery that were included in this intervention. Several questions included in the Public Health CARES Tool were incorporated from previously validated tools that measure similar to those concepts included in the implemented CCT program in this study such as unconscious bias, health disparities and structural racism. However, the tool had not been previously evaluated for validity and reliability in the integrated form and therefore required new testing.

Standards, Instruments, and Assessments of Cultural Competency Training Programs

There are existing policy-level standards, instruments, and tools that guide or measure outcomes of various CCT programs. Self-assessments are often included in these evaluation strategies. There are also tools developed to evaluate organizational practices related to cultural competency. At the organizational level, national standards have been created to support a systems-level approach to cultural competency.

Culturally and Linguistically Appropriate Services Standards (CLAS)

The Culturally and Linguistically Appropriate Services Standards (CLAS) provides an evaluation framework for organizational-level policies and practices related to cultural competency. The Health and Human Services Office of Minority Health (OMH) implemented CLAS standards in 2000 and revised them in 2013. In general, CLAS standards address practice goals including culture, patient/provider interactions, and health equity (Office of Minority Health, 2013). These standards provide a common framework for healthcare organizations to follow when implementing culturally appropriate services in order to improve
the quality of health care and reduce health disparities (US Department of Health and Human Services, 2015).

The OMH developed an assessment instrument for local health departments in 2003 (Office of Minority Health, 2013). This tool, the Self-Assessment Tool for Culturally and Linguistically Appropriate Services in Local Public Health, focuses on organizational level practices and provides an opportunity for administrators and staff to reflect on their local health department’s specific policies and practices related to cultural competency. There are also questions in this instrument that include self-reported responses for staff to reflect on their practices related to culturally appropriate care delivery. Most of the questions included in this instrument provide a checklist of options related to current culturally appropriate practices which the participant can select where applicable. A limitation of this assessment is that it does not identify individual levels of cultural competency and is not intended to assess the level of cultural competency as an outcome of a specific CCT.

Healthcare Provider Cultural Competence Instrument (HPCCI)

The Healthcare Provider Cultural Competence Instrument (HPCCI) was developed in response to the lack of a standardized instrument to measure outcomes of CCT programs in various professions. Schwarz and colleagues (2015) validated the HPCCI in an attempt to find a tool that could ensure consistent training methods across several health professions. According to Schwarz and colleagues, “The HPCCI measures a health care provider’s cultural competence along 5 primary dimensions: (1) awareness/sensitivity, (2) behaviors, (3) patient-centered communication, (4) practice orientation, and (5) self-assessment” (p. 52). The HPCCI was found to be valid in its use by a limited sample of only one hospital. Therefore, this
instrument may not be generalizable among other organizational healthcare settings. In addition, this assessment tool was designed to measure self-report responses of cultural competency and is not designed to evaluate the effectiveness or impact of a specific CCT intervention.

**Cultural and Linguistic Competence Health Practitioner Assessment (CLCHPA)**

Georgetown University’s National Center for Cultural Competence (NCC) developed a similar self-assessment to the HPPCI tool called Cultural and Linguistic Competence Health Practitioner Assessment (CLCHPA). According to the NCC, the CLCHPA is designed to examine cultural and linguistic competence in four dimensions: values, policy, structure, and practice. Within these four dimensions, the CLCHPA assesses Knowledge of Diverse Communities, Organizational Philosophy, Personal Involvement in Diverse Communities, Resources and Linkages, Human Resources, Clinical Practice, and Engagement of Diverse Communities. (Georgetown University, n.d., para. 2)

Further, the self-assessment design of the CLCHPA is intentional because the NCC views the method of self-assessments as an important process of ongoing evaluation processes to measure cultural competence (Georgetown University, n.d.). It is important to note that the CLCHPA is not designed for evaluation purposes or outcomes of research training. According to NCC, the CLCHPA is “designed solely as a self-assessment and educational activity. It may not be used as a measure in research or for evaluation of education or training interventions” (Georgetown University, n.d., para. 4).
Inventory for Assessing Cultural Competence Among Healthcare Professionals (IAPCC-R)

Another tool that has been used to measure cultural competency is the Inventory for Assessing Cultural Competence Among Healthcare Professionals (IAPCC-R). Developed by Campinha-Bacote (2002), this instrument was originally designed to identify cultural competency-related factors in nursing, but has applications to assessing cultural competency among other health professions. Olt, Jirwe, Gustavsson, and Emami (2010) described that, “The instrument contains 25 items evenly distributed into five subscales” (p. 55). The scales reflected in the instrument focus on characteristics of culturally competent healthcare delivery and include the desire to serve diverse patients, awareness, knowledge, competent skills, and how providers interact with diverse patients encounters. Although the tool is available for purchase and through approval of use by the author, the use of the IAPCC-R is limited in that it is not freely available. This tool also is not developed to assess general cultural competency outcomes associated with a specific CCT.

Clinical Cultural Competency Questionnaire (CCCQ)

A similar tool is the Clinical Cultural Competency Questionnaire (CCCQ). According to Okoro, Odedina, Reams, and Smith (2012), the CCCQ is a self-administered assessment instrument that measures different aspects of cultural competency, including knowledge of health disparities, skills in dealing with sociocultural issues, comfort in dealing with cross-cultural situations, attitude toward factors contributing to health disparities, self-awareness of racial/ethnic/cultural identity, self-awareness of racial/ethnic/cultural stereotypes, self-awareness of biases and prejudices, and importance of training in cultural competency. (p. 3)
The CCCQ was developed by Dr. Robert Like and has been widely used as an assessment tool across disciplines to self-assess cultural competency (Okoro et al., 2012). However, this tool is not publically available and not developed to assess general cultural competency outcomes associated with a specific CCT.

**Prejudice Response Scales**

Plant and Devine (1998) developed a new scale to address factors related to individual responses to engaging in prejudicial behavior. Although not a common concept in traditional CCT, the ability to monitor and measure how to control prejudicial behavior is an important factor in the engagement of culturally appropriate healthcare delivery. In Plant and Devine’s work, a goal was to develop and validate measures that assess motivational factors of responding to and engaging in prejudicial behaviors (Plant & Devine, 1998). Through their research, they developed the Internal Motivation to Respond Without Prejudice Scale (IMS) and the External Motivation to Respond Without Prejudice Scale (EMS). The IMS presents questions such as, “I attempt to act in non-prejudiced ways toward Black people because it is personally important to me” (p. 830), whereas the EMS includes questions focused on acting in a non-prejudicial way due to outlying factors. For example, the EMS includes questions such as, “I try to hide any negative thoughts about Black people in order to avoid negative reactions from others” (p. 830). Both approaches in these two scales identify the motivating factors for the non-engagement of prejudicial behavior. This measure is limited in that it is included as part of separate assessments that are designed to assess motivation-related factors of prejudice and not a CCT.
The Implicit Association Test (IAT) is widely accepted as the standard measure of implicit bias across disciplines (Blair et al., 2013). The IAT can also be used as a stand-alone intervention. Greenwald et al. (1998) developed the IAT to reduce responder bias in order to assess implicit bias. According to Fazio and Olson (2003), the IAT “assesses the strength of an association between a target concept and an attribute dimension by considering the latency with which participants can employ two response keys when each has been assigned a dual meaning” (p. 299). The participant’s task is to categorize stimuli as they appear on a screen (Greenwald & Krieger, 2006). The IAT can be used to determine implicit bias among a number of constructs including age, race, skin tone, and religion. The result of the test demonstrates the strength of association of implicit bias with a specific category (i.e., preferences for one race over the other.

In their work, Gonzalez, Kim, and Marantz (2014) administered the IAT to medical students. The IAT is a widely-used tool that is based on timed, self-reported responses and measures the strength of implicit bias. The researchers assessed participants by categorizing them into two groups. The study included a statement identifying whether a participant felt that implicit bias could impact his or her clinical decision making. Based on what the participants selected, the researchers categorized groups as either acceptors or deniers of implicit bias. Gonzalez et al. (2014) found the participants who were acceptors had weaker associations of implicit bias in the IAT and were more willing to accept their IAT result. This measure is limited in that it is designed to assess general perspectives of implicit and is not included as
part of a specific CCT evaluation metric and therefore does not provide a complete measurement of cultural competency.

Public Health CARES Tool

A new tool was created that integrated aspects of four existing tools or measures (see Table 1). This new tool addresses standard concepts of cultural competency as well as newly identified training content. The Public Health CARES Tool was developed by integrating the CCCQ, components of the Internal Motivation to Respond Without Prejudice Scale (IMS) and External Motivation to Respond Without Prejudice Scale (EMS). Additionally, one measure of perceptions of bias by Gonzalez and colleagues (2014) based on the self-reported, perceived influence of implicit bias on clinical decision making was also included. The work done by Plant and Devine (1998) assessed motivational factors of prejudice by identifying internal and external influences of prejudice and bias. The accepter/denier categories of implicit bias were developed and first tested by Gonzalez and colleagues (2014) in a study of medical students. Additional questions in the Public Health CARES assessment tool were derived from the CCCQ which includes information on characteristics and measures of cultural competency. The Public Health CARES tool was designed to measure knowledge and awareness of the training participants and to determine the attitude and engagement level of participants to practice culturally appropriate care delivery in public health practice (see Table 2).

The Public Health CARES Tool consists of a 21-item pre assessment and a 22-item post assessment that includes one additional open-ended question (see Appendices A and B). In addition, 9 demographic and other participant characteristics questions are included as part of the pre and post assessment. Two questions in the pre and post assessment include categorical
Table 1

Existing Tools Used in Public Health CARES Tool Adaptation

<table>
<thead>
<tr>
<th>Existing tool</th>
<th>Adaptation for Public Health CARES tool</th>
<th>Public Health CARES tool question number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Motivation to Respond Without Prejudice Scale (IMS)</td>
<td>Questions on perception of personal motivations to reduce bias</td>
<td>Questions 19, 21</td>
</tr>
<tr>
<td>External Motivation to Respond Without Prejudice Scale (EMS)</td>
<td>Questions on perception of personal motivations to reduce bias</td>
<td>Question 20</td>
</tr>
<tr>
<td>Gonzalez and colleagues (2014) based on the self-reported, perceived influence of implicit bias on clinical decision making</td>
<td>Included a statement on the perceived effects that unconscious bias may have on clinical and non-clinical decision-making (acceptors/deniers of unconscious bias)</td>
<td>Question 10</td>
</tr>
<tr>
<td>Clinical Cultural Competency Questionnaire (CCCQ)</td>
<td>Assessments on knowledge, awareness, attitudes, and beliefs of CC</td>
<td>Questions 11-18</td>
</tr>
</tbody>
</table>

response options of agree, disagree, or unsure. The remaining ten forced-choice questions (Questions 12-21 on the final Public Health CARES tool) include four Likert-scale response categories (strongly disagree, disagree, agree, strongly agree). The maximum number of points for the ten Likert-scale questions is 40. The sum of point values from the ten quantitative Likert-scale questions comprise the Public Health CARES. This score is designed to evaluate the level of knowledge/awareness and attitudes/beliefs related to culturally appropriate healthcare delivery. The higher the score, the more likely a participant is engaged and ready to practice culturally appropriate care delivery. Although the Public Health CARES Tool is work
<table>
<thead>
<tr>
<th>Question</th>
<th>Source</th>
<th>Measures</th>
</tr>
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<tbody>
<tr>
<td>I know how to provide culturally sensitive clinical or public health</td>
<td>Like, R. (2001). Clinical Cultural Competence Questionnaire. Center for</td>
<td>Knowledge/awareness</td>
</tr>
<tr>
<td>preventive services to diverse populations.</td>
<td>Healthy Families and Cultural Diversity, Robert Wood Johnson Medical</td>
<td></td>
</tr>
<tr>
<td></td>
<td>School. <a href="http://rwjms.umdnj.edu/departments_institutes/family_medicine/">http://rwjms.umdnj.edu/departments_institutes/family_medicine/</a></td>
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<td></td>
<td>chfcd/grants_projects/documents/Pretraining.pdf</td>
<td></td>
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<tr>
<td>I know about social and cultural characteristics of diverse racial and</td>
<td>Like, R. (2001). Clinical Cultural Competence Questionnaire. Center for</td>
<td>Knowledge/awareness</td>
</tr>
<tr>
<td>ethnic groups.</td>
<td>Healthy Families and Cultural Diversity, Robert Wood Johnson Medical</td>
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<td></td>
<td>School. <a href="http://rwjms.umdnj.edu/departments_institutes/family_medicine/">http://rwjms.umdnj.edu/departments_institutes/family_medicine/</a></td>
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<td>School. <a href="http://rwjms.umdnj.edu/departments_institutes/family_medicine/">http://rwjms.umdnj.edu/departments_institutes/family_medicine/</a></td>
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<td></td>
<td>chfcd/grants_projects/documents/Pretraining.pdf</td>
<td></td>
</tr>
<tr>
<td>I know about the historical and contemporary impact of racism, bias,</td>
<td>Like, R. (2001). Clinical Cultural Competence Questionnaire. Center for</td>
<td>Knowledge/awareness</td>
</tr>
<tr>
<td>prejudice, and discrimination in health care experienced by various</td>
<td>Healthy Families and Cultural Diversity, Robert Wood Johnson Medical</td>
<td></td>
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<tr>
<td></td>
<td>chfcd/grants_projects/documents/Pretraining.pdf</td>
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(continued on following page)
adapted from previously validated assessment tools, it includes a newly integrated frame of previous tools and measures and was therefore reassessed for content validity and test-retest reliability prior to implementation.

Content Validity and Test-Retest Reliability Testing of the Public Health CARES Tool

Content Validity

Content validity is defined as “the degree to which an instrument has an appropriate sample of items for the construct being measured” (Polit & Beck, 2006, p. 489). The goal of content validity is to determine the degree to which the information included in the assessment is measuring and representative of the concepts included in assessment instrument (Yaghmale, 2009). Polit and Beck (2006) discussed that content validity concerns the degree to which a sample of items, taken together, construct adequate operational definition of a construct. There is also agreement in the
methodologic literature that content validity is largely a matter of judgment, involving two distinct phases: a priori efforts by the scale developer to enhance content validity through careful conceptualization and domain analysis prior to item generation, and a posteriori efforts to evaluate the relevance of the scale’s content through expert assessment (e.g. Beck & Gable, 2001; Lynn, 1986; Mastaglia, Toye, & Kristjanson, 2003). (p. 490)

Means of assessing content validity vary. However, a common strategy is to identify a panel of experts in the field related to content of the tool, and to ask them to review the tool and provide feedback. Content-validity can be tested through the use of the Content Validity Index (CVI) or by identifying common themes from feedback provided on the tool (Yaghmale, 2009). The CVI measures the content validity of individual items and the scale that is used to quantitatively assess. However, there are mixed reviews in the literature on the effectiveness of measuring content validity using the CVI (Polit & Beck, 2006). Therefore, the methodology used in this study followed preferred standards of qualitative assessment in which experts review the content of a tool and provide qualitative feedback.

**Test-Retest Reliability**

In general, reliability measures “internal consistency or average correlation of items in a survey instrument to gauge its reliability” (Santos, 1999, p. 1). One way to calculate reliability is through the Cronbach’s Alpha (Santos, 1999). According to Gliem and Gliem (2003), “Cronbach’s Alpha is a reliability test technique that requires only a single test administration to provide a unique estimate for the reliability for a given test” (p. 84). However, it is important to note that in smaller samples, Cronbach’s Alpha is not an appropriate measurement of reliability. The Pearson’s Correlation Coefficient is a more appropriate and preferred method with small samples.
Test-retest reliability can be defined as the degree to which individual responses are consistent from the same responder at various time intervals (Gliem & Gliem, 2003). This is a widely-accepted measure in determining consistency of responses in testing a new instrument/tool. Test-retest reliability can be measured using the Pearson’s Correlation Coefficient. According to Sedgwick (2012), “The Pearson Correlation Coefficient measures the strength of linear association between two variables” (p. 345). This measure uses a scale from -1 to 1 (Sedgwick). Zero on the scale demonstrates no reliability in the measurement, and where 1 on the scale indicates perfect reliability. For the purpose of test-retest reliability, a measurement of .7 indicates acceptable reliability.

Methods

Content-Validity Testing

Institutional Review Board approvals from Northern Illinois University and the University of Illinois College of Medicine were received prior to the implementation of all project components. Experts in the field of CCTs and related assessments were requested to participate in the content-validity testing of the Public Health CARES Tool. These experts were identified from a previous study assessing CCT programs in the United States and through professional contacts through their affiliation with a state-based program office of the Area Health Education Centers Network Program (AHEC; Hinkle, 2018). A one-group non-experimental descriptive study was used as the study design for content validity. A convenience sample of identified experts was used in this study.
A recruitment email was sent to seven prospective participants for the content validity testing (see Appendix C). A reminder email was sent with the same information that was included in the initial email 1 week after the initial email was sent. No additional follow up was done after the second contact was made to prospective participants.

A statement of informed consent was included as part of the introduction to the tool, and participants could decline to participate in the validity testing at any time. Participants in the content validity testing were asked to provide feedback on the tool via a Qualtrics link that included the pre and post assessments. A Word document of the two assessments with open field texts for feedback were also made available to participants upon request. Participants returned their reviews of the pre and post assessment via Qualtrics or via email. I then analyzed the results. Qualitative data from the feedback provided in the content-validity testing were coded for common themes by me. Standard qualitative coding methodology was used wherein groups of related comments are grouped together and categorized as specific themes. (Yaghmale, 2009). I coded the themes. Themes and feedback are outlined in the results section below.

Reliability Testing

Institutional Review Board approvals from Northern Illinois University and the University of Illinois College of Medicine was granted for the one-group test-retest design for reliability testing. A convenience sample of was used in this study. Ten prospective participants for the test-retest reliability testing were identified based on their employment status at an academic center that specialized in community health projects. A recruitment email was sent to identified prospective participants (see Appendix D). After prospective participants expressed
interest in testing the reliability of the tool, a statement of informed consent was sent to them. An updated tool, based on the results of the content-validity results (see Appendices E and F), was administered to participants. The assessments were sent to the participants via a Qualtrics link that included the tool for the initial test. A second link was sent to the same participants 1 week after completion of the initial test.

Results

Content-Validity

Seven individuals were invited by email to participate in the content validity of the tool. One email was returned as undeliverable, and one person did not respond. Follow-up contact was made to other identified staff at the organization where the email was returned but no additional staff agreed to participate. As a result of the emails, 5 participants reviewed the tool. Three of the five participants reviewed the tool online via Qualtrics and two requested a Word version of the pre and post assessments.

Four themes were identified through the analysis: Change to Demographics Approach, Clinical and Non-Clinical Applications, Consistency of Scale, and Expansion of Category-Response Selections (see Table 3). The Change to Demographics Approach theme related to suggestions made to revise the demographics section of the assessment tool. The Clinical and Non-clinical Applications theme was defined by three participants who suggested that questions in the assessment that referenced the degree to which clinical only decision making is described should be expanded upon to include the phrase “clinical and non-clinical” because the target population for the training intervention includes both clinical and non-clinical public
health workers. The Consistency of Scale theme was defined as ensuring that the response options included in the assessments were standard throughout based on question type. The Expansion of Category-Response Selections theme was defined as providing more response options. This included any questions that should offer a category-response option of being unsure. None of the participants indicated that concepts were missing or inappropriately included in the tool.

Table 3

Examples of Validity Assessment Feedback by Qualitative Theme

<table>
<thead>
<tr>
<th>Qualitative theme identified</th>
<th>Example of reviewer feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change to demographics approach</td>
<td>Consider expanding or changing demographic categories.</td>
</tr>
<tr>
<td>Clinical and non-clinical applications</td>
<td>Include an option for clinical/non-clinical decision making rather than listing as clinical decision making.</td>
</tr>
<tr>
<td>Consistency of scale</td>
<td>Ensure that Likert scale is consistent.</td>
</tr>
<tr>
<td>Expansion of category response selections</td>
<td>Provide more response options (e.g. prefer not to respond, unsure).</td>
</tr>
</tbody>
</table>

Reliability

All ten of the ten invited prospective participants agreed to participate in the reliability testing. Test-retest reliability of the tool including all demographic questions and Public Health was conducted using SPSS version 24 statistical analysis software. A Pearson’s Correlation Coefficient was calculated using correlational bivariate analysis for each quantitative question.
included in the instrument. The test-retest reliability coefficients ranged from .703 (acceptable reliably) to 1 (perfect reliability). The majority of the questions (N=10) indicated a perfect reliability coefficient. All reliability measures were significant at least at the .05 level (see Table 4).

Table 4

Test-Retest Reliability of Public Health CARES Score Questions

<table>
<thead>
<tr>
<th>Question number, variable</th>
<th>Pearson’s Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre/post question 1, Gender</td>
<td>.802</td>
</tr>
<tr>
<td>Pre/post question 2, Race</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 3, Ethnicity</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 4, Position</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 5, Clinical</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 6, Workplace</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 7, Zip</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 8, Education</td>
<td>1</td>
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<tr>
<td>Pre/post question 9, Years</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 10, Bias</td>
<td>.947</td>
</tr>
<tr>
<td>Pre/post question 11, Intention</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 12, Knowledge sensitive</td>
<td>.703</td>
</tr>
<tr>
<td>Pre/post question 13, Social</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 14, Disparities</td>
<td>.764</td>
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<tr>
<td>Pre/post question 15, History</td>
<td>.873</td>
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<tr>
<td>Pre/post question 16, Aware</td>
<td>.867</td>
</tr>
<tr>
<td>Pre/post question 17, Comfort</td>
<td>.890</td>
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<tr>
<td>Pre/post question 18, Com/advise</td>
<td>.892</td>
</tr>
<tr>
<td>Pre/post question 19, Control</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 20, Prejudice</td>
<td>1</td>
</tr>
<tr>
<td>Pre/post question 21, Non-prejudice</td>
<td>1</td>
</tr>
</tbody>
</table>
Discussion

Content Validity

The comments from participants in the content validity review primarily related to the overall organization of the tool. None of the participants indicated that any items should be changed or added regarding the content. It was noted by three participants who reviewed the tool that the question, “unconscious bias might affect some of my clinical decisions or behaviors” should include an option for clinical and nonclinical decision-making to be inclusive to those participants who may not have clinical responsibilities as part of their position with a local health department. Therefore, the question was revised to state, “Unconscious bias might affect some of my clinical/nonclinical decisions or behaviors.” Only one participant identified a content issue in which one word was identified as being omitted in the introduction section of the tool. Limitations of the validity testing included a small sample size of participants. Additionally, only experts in the field were identified to participant in content reliability. A sample of non-experts may have been able to provide a varied perspective of the content of the tool.

Reliability

The reliability testing demonstrated reliability scores ranging from acceptable to perfect. It should be noted that the question/variable that had the lowest reliability score (.703) was the tool’s first item. Two participants in the test-retest reliability selected the opposite response from pre- to-posttest (strongly disagree to strongly agree). Overall, the reliability results are aligned with testing done by the original authors of several components of the tool.
(Like, 2001). Therefore, the tool in its final form, (see Appendices E and F) was selected to evaluate the Public Health CARES CCT training. The sample of participants in the test-retest reliability represented a similar cohort of professionals working in an academic setting with duties similar to those of the target sample for the Public Health CARES training intervention. However, a limitation of the reliability testing was that the sample of participants was not comprised of public health workers. Cronbach’s Alpha Coefficient is a widely-used metric for reliability testing. However, with the sample size of 10, it is more appropriate to use the Pearson’s Correlation Coefficient, particularly given this study’s test-retest reliability methodology.

Future research could include content-validity testing using the CVI because it may be useful to compare both qualitative and quantitative approaches and assess differences in findings. However, because validity testing in this study was conducted on an assessment using integrated components of other previously validated instruments/tools, it may not be necessary to use two methods in assessing content-validity. Finally, in this study, test-retest reliability was conducted after one week. Future studies should consider a time series that occurs longer than one week may have better identified gaps in testing and further measure consistency in responses.

Additionally, it would be important for future studies to compare results from both the validity and reliability testing to the results of the testing done by the original developers of the assessments used to create the Public Health CARES Tool. Further, reliability testing should be done on Public Health CARES Tool on groups who will be using the tool as part of a training intervention. This study developed a tool that was found to be valid and reliable. Future studies should consider additional validity and reliability testing with different sample sizes and
populations. This includes testing the tools using public health workers as part of the testing sample.
CHAPTER 3

THE EFFECTS OF A CULTURAL COMPETENCY TRAINING ON KNOWLEDGE/AWARENESS AND ATTITUDES/ENGAGEMENT: PUBLIC HEALTH CARES

Abstract

There are a variety of scales that have been used to measure cultural competency, including knowledge and awareness of culturally appropriate care delivery. The existing scales are often tied to specific cultural competency training programs that are not easily available or generalizable among various healthcare disciplines. Other tools and scales are aimed at measuring cultural competency of specific types of health professions students, particularly nursing students. This study used a new tool, the Public Health CARES Tool, to measure the cultural competency of public health workers. A non-probability sample of local public health department employees in one Midwestern state included nurses, physicians, other clinicians, administrators and support staff. A two-stage recruitment process was utilized with research site locations recruited through online recruitment fliers distributed to health department administrators who then could decide to share a link to the online training with their staff. Participants were asked to complete a pre assessment, an online cultural competency training, and a post assessment. The Public Health CARES Tool was used for both the pre and post
assessment. A total of 187 participants, from 13 out of a possible 95 local health departments in the state, completed the pre assessment and 132 (71%) of those original participants completed the post assessment. Overall pre assessment and post assessment scores demonstrated no significant change. The average CARES score was 30.9 out of a possible 40 points pre assessment compared with 31.1 out of a possible 40 points post assessment. Participant characteristics were not significantly associated their perceived intention to practice culturally appropriate healthcare or perceptions. There was a significant difference between education levels and their perceptions of the influence of unconscious bias (p =.00 in the pre assessment). Additional findings suggest a ceiling effect related to pre assessment CARES Scores.

Significance of the Problem

Cultural Competency Training programs have often been used as a way to increase the knowledge and awareness of healthcare providers related to providing culturally appropriate healthcare. However, there are gaps in the literature regarding the effects of cultural competency training programs that integrate additional aspects of culturally appropriate healthcare delivery. Through a literature review, no studies were identified that indicated the level of cultural competency among public health workers. Although there are several ways to measure cultural competency, the metrics for these measurements are variable and may not apply to all healthcare provider disciplines. Therefore, the Public Health Readiness and Engagement Score (CARES) Tool was designed to address gaps in current evaluation measures of CCT by integrating constructs from previously validated tools/instruments. The Public Health CARES Score is based on 10 4-point Likert scale items that are part of the CARES
Tool. The CARES Tool was used for pre and post intervention assessment in conjunction with the Public Health CARES Training intervention.

Cultural Competency Instruments, Tools, and Scales

Research has described various mechanisms for assessing the impact of cultural competency training programs. Most of the metrics used to measure cultural competency training programs assess a participant’s knowledge, attitudes and awareness using a scale. However, it should be noted that tools and scales vary in use and metrics. Several tools and scales require self-reported responses. A general overview of tools and scales described in the literature follows. A number of these scales were identified by Loftin, Hartin, Branson, and Reyes (2013) as part of a review of cultural competency tools in the nursing literature.

Inventory for Assessing Cultural Competency (IACC)

The Inventory for Assessing Cultural Competency (IACC) tool is based on Campinha-Bacote’s (1994) culturally competent model of care and measures four components of the model (cultural awareness, cultural knowledge, cultural skill, and cultural encounter). This is a self-report tool consisting of 20 questions. In their study, Sargent, Sedlak, and Martsolf (2005) administered the tool as part of an assessment of CCT to nursing students and faculty. In their study students and faculty were assessed using the IAPCC and determined to either have cultural awareness or cultural competence based on their score. The researchers in this study demonstrated that participants in an educational training program can change from being culturally aware to culturally competent.
**Cultural Competence Assessment (CCA)**

The Cultural Competency Assessment (CCA) measures knowledge and attitudes by assessing the respondents’ awareness and sensitivity to cultural competency using a Likert scale. The CCA is a “26-item instrument designed to measure cultural diversity experience, awareness and sensitivity, and competence behaviors” (Schim, Doorenbos, & Borse, 2005, p. 356). Included in the CCA is a question regarding the level of experience the participant has in working with diverse patient populations in a healthcare setting (Schim et al., 2005). According to the researchers, “The items are summed for each subscale score; higher scores indicate higher levels of knowledge and more positive attitudes, and greater self-reported frequency of competence behaviors (Schim et al., 2005, p. 357).” In their study, the researchers sampled 153 healthcare provider participants in an urban hospital settings. There was no intervention done in this study. The assessment was used to identify the cultural competency characteristics of the sample population. Demographic information on the sample of participants was also included as part of the administration of the CCA. The study found that healthcare providers who were educated (including having formal training in cultural competency in the past) and had more experience with diverse patient populations had higher levels of cultural competence (including sensitivity and awareness).

**The Transcultural Self-Efficacy Tool (TSET)**

The Transcultural self-efficacy Tool (TSET) was designed to measure nursing student self-efficacy (Jeffreys, 2000). According to Jeffreys (2000), “The TSET was designed to measure nursing student self-efficacy for preforming general transcultural nursing skills among
diverse client populations” (p. 127). Various themes were included as part of the TSET related to cultural competent healthcare delivery. These themes included cognitive (knowledge skills), practical (interview) or affective (attitudes, values and beliefs; Jeffreys, 2000).

The TSET is an 83-item questionnaire that includes a Likert scale and a general rating scale. The general rating scale asks respondents to select their confidence level between 1 (not confident) to 10 (total confidence). There are also subscales that measure the strength of the self-efficacy. In one study Jeffreys and Dogan (2012) implemented the TSET to nursing students using both a longitudinal sample (n = 36) and a cross sectional sample (n = 147). In both samples the TSET demonstrated that increased exposure to cultural competency curricula was associated with higher levels of self-efficacy in performing culturally appropriate healthcare delivery.

Cultural Knowledge Scale (CKS)

The Cultural Knowledge Scale (CKS) is used to measure cultural knowledge and was designed using previously validated and reliable instruments (Brathwaite & Majumdar, 2006). The CKS includes a 24 item Likert scale questionnaire. Subscales are also included as part of this evaluation tool. Included in the CKS are themes of, “health seeking behavior perception, understanding of health and illness, response to health and treatment of illness conditions” (Brathwaite & Majumdar, 2006, p. 473).

This scale was used to measure cultural knowledge among a group of 76 public health nurses in Canada. Cultural knowledge was measured after the participants completed a five-week training course. This course covered five various topics associated with culturally competent care delivery. The CKS was provided as part of a time series evaluation
methodology. Qualitative questions were also included with the administration of the CKS. Through the time series analysis, it was found that the intervention on culturally appropriate care delivery increased participated knowledge, based on the CKS scores.

Cultural Awareness Scale (CAS)

The Cultural Awareness Scale was first introduced by Rew, Becker, Cookston, Khosropour, and Martinez (2003) and was designed to assess cultural awareness among nursing students. According to Krainovich-Miller et al. (2008),

CAS contains 36 items, a 7-point Likert-type ratings scale (1 = strongly disagree to 7 = strongly agree) in which respondents circle their responses, and five subscales/factors (General Educational Experience; Cognitive Awareness; Research Issues; Behaviors/Comfort with Interactions; and Patient Care/Clinical Issues). (p. 252)

Part of this tool included questions regarding participants’ general experiences in this nursing school, and awareness, attitudes, and experiences in their nursing curriculum. Although the study included 236 nursing students at all levels of education, the results of this study had limitations. The researchers noted that more work should be done to test the reliability and validity of the CAS among a nursing student population.

Public Health Culturally Appropriate Readiness and Engagement Score

Often, existing scales are tied to metrics included in specific cultural competency training programs that are neither easily available nor generalizable to multiple healthcare disciplines. Other tools and scales have been created to identify characteristics of cultural competency among health professions students, particularly nursing students. The Public Health CARES Tool was designed to address gaps such as accessibility and generalizability in
current tools and scales that assess cultural competency. The tool was integrated by using previously validated tools including the Clinical Cultural Competency Questionnaire (CCCQ). The CCCQ, developed by Robert Like, has been widely used as an assessment tool across disciplines to self-assess cultural competency (Okoro et al., 2012). Additional components of the Public Health CARES Tool were derived from Plant and Devine (1998) entitled Internal Motivation to Respond Without Prejudice Scale (IMS) and External Motivation to Respond Without Prejudice Scale (EMS), and from work done by Gonzalez and colleagues (2014) based on the self-reported influence of implicit bias on their clinical decision making. The Public Health CARES Tool was designed to measure knowledge/awareness and attitudes/engagement of public health workers related to cultural competency.

The Public Health CARES Tool and Score consists of a 21-item pre assessment version and a 22-item post assessment version that includes one additional open-ended question (Question 31 on the post assessment). In addition, 9 demographic and other participant characteristics questions are included as part of the pre and post assessment. Two questions in the pre and post assessment include categorical response options of agree, disagree, or unsure. Ten questions (Questions 12-21 on the Public Health CARES Tool) include four Likert-scale response categories that together comprise the Public Health CARES score. This score is designed to measure the level of knowledge/awareness and attitudes/engagement related to culturally appropriate healthcare delivery. The score, is calculated by adding Likert scale response categories: Strongly Disagree=1, Disagree=2, Agree=3, Strongly Agree=4. The maximum number of points for the ten quantitative Likert-scale questions is 40. The higher the Public Health CARES score, the more likely the participant is engaged and ready to practice
culturally appropriate care delivery. Public Health CARES scores can range from 4 to 40. This scale is based on similarly structured tools (Campinha-Bacote, 2002).

Methods

A one group pre/post test design was used for this study. Institutional Review Board approvals from Northern Illinois University and the University of Illinois College of Medicine were received prior to the implementation of all project components. Given the lack of intervention studies using the specific variables and measures, estimating effect size in order to determine power and needed sample size was difficult. Therefore, power analysis was done using a generally accepted rule for a simulation study of the number of events per variable in logistic regression analysis (Peduzzi, Concato, Kemper, Holford, & Feinstein, 1996), commonly known as the one to ten rule. For this study, the sample size followed the one in ten rule by considering three key variables of interest in the study including the Public Health CARES Score, the intent to practice and acceptance of the influence of unconscious bias. The target sample size using this analysis was 130 participants.

Recruitment

Each local health department’s chief administrator in the identified state was emailed a recruitment flier (see Appendix G). After interested administrators contacted me in response to the flier, I followed up with interested administrators via personal phone calls to discuss the research study, and to address any questions (see Appendix H).
Intervention

A link to the Public Health CARES training intervention was sent after administrators of local health departments confirmed their organization’s participation. The training link was then shared by administrators with their staff. Participants in the Public Health CARES training were asked to voluntarily complete a pre and post assessment that included the Public Health CARES Tool. The pre assessment was completed prior to the start of the CCT intervention. After all modules of the online CCT intervention were completed, participants were then prompted to complete the post assessment. Data from pre and post assessment responses were recorded using Qualtrics. The initiation and completion of the pre assessment was required in order to access the training intervention. Respondents who did not answer one or two of the demographic responses (N=2), but did respond to CARES score questions or if they did not respond to CARES score questions (N=1), but did respond to demographic questions were still included in the sample.

Analysis

There were multiple steps to the data analysis. I downloaded from Qualtrics the data from the pre and post assessment and converted the file into a Comma Separated Values (CSV) file. I then cleaned the data to ensure that pre and post test data were appropriately and categorized data by pre and post responses. I cleaned the organized data set through a review process and coding missing responses in SPSS. For the variable Race, I recorded the 7 values into 2 two values, White and Non-White. Although data were not recorded as matched individual pre and post assessment responses, I reviewed data to determine if post hoc
matching was possible. Post hoc matching was not possible because of the variability in the pre and post test demographic responses. The final CSV was converted into an SPSS file for further analysis. Frequency distribution and crosstabs of demographic and other participant characteristics along with other selected variables were analyzed. Zip codes were compared to Rural-Urban Commuter Codes (RUCA) to identify the geographic distribution of participants. Independent sample t tests were completed to compare group means pre to post. Qualitative analysis was completed by me on the final question included on the post assessment. I reviewed responses and categorized them into themes. Statistical analysis was done using frequencies, crosstabs, independent sample t test, and ANOVA, where applicable.

Results

**Pre Assessment Characteristics of Participants**

A total of 187 participants, from 13 out of a possible 95 local health departments, completed the pre assessment. Of those participants, 87% identified as female, 10% identified as male, and 3% preferred not to respond. In terms of race, 89% identified as White and 11% identified as Non-white. In terms of ethnicity, 72% identified of participants as Non-Hispanic participants, 21% identified as Hispanic, and 6% preferred not to respond (see Table 5). In terms of highest level of education, 32% of participants had a Bachelor’s degree, 23% had a Master’s degree, 22% were a high school graduates and 15% had an Associate’s degree (see Figure 2). Over 3/5 (63%) of pre assessment participants did not provide clinical care as part of their job duties. Experience levels in Public Health varied with a range of 0-30 years, a median of 13 years, and a mode of 2 years.
Table 5

Pre Assessment Demographics

<table>
<thead>
<tr>
<th>Quality</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>10</td>
</tr>
<tr>
<td>Females</td>
<td>87</td>
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<tr>
<td><strong>Race</strong></td>
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<tr>
<td>White</td>
<td>89</td>
</tr>
<tr>
<td>Non-white</td>
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<tr>
<td>Black</td>
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<tr>
<td><strong>Ethnicity</strong></td>
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</tr>
<tr>
<td>Hispanic</td>
<td>21</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>72</td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>7</td>
</tr>
</tbody>
</table>

Figure 2. Highest Level of Education Pre Assessment
Pre Assessment Responses

Participants were asked to respond to two questions related to perceptions of unconscious bias and intent to practice culturally appropriate healthcare. All participants were asked to respond to the question “Unconscious bias might affect some of my clinical and/or non-clinical decision making”. Difference in responses to the question by gender and race are outlined in Table 6. There was a significant difference between males and females regarding the perceptions of unconscious bias (p = .00) with more males (59%) than females (34%) disagreeing with the statement. It was found that responses regarding perceptions of unconscious bias were not significant (p = .17) by the highest level of education. Participants were also asked to respond to the question, “I intend to change how I interact and/or practice culturally appropriate care delivery with racially diverse patients/clients in the future”. Percentages of responses to this question by gender and race are outlined in Table 7. There were no significant differences in responses to this question between males and females (p = .62). The education level of participants was also considered (see Figure 2) and there was not a significant difference by responses and education level regarding the intent to practice culturally appropriate healthcare (p = .63). Finally, Public Health CARES scores were analyzed in the pre assessment. The average CARES score was 30.9 out of a possible 40 points pre assessment. The pre assessment mean range of individual question scores was 2.73 to 3.42.
Table 6

Pre Assessment Responses by Race and Gender: Unconscious Bias Might Affect Some of My Clinical And/or Non-Clinical Decision Making

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>42%</td>
<td>37%</td>
<td>21%</td>
</tr>
<tr>
<td>Non-White</td>
<td>37%</td>
<td>47%</td>
<td>16%</td>
</tr>
<tr>
<td>Male</td>
<td>6%</td>
<td>59%</td>
<td>35%</td>
</tr>
<tr>
<td>Female</td>
<td>47%</td>
<td>33%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Table 7

Pre Assessment Responses by Race and Gender: I Intend to Change How I Interact And/or Practice Culturally Appropriate Care Delivery With Racially Diverse Patients/ Clients in the Future

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>54%</td>
<td>17%</td>
<td>29%</td>
</tr>
<tr>
<td>Non-White</td>
<td>40%</td>
<td>20%</td>
<td>40%</td>
</tr>
<tr>
<td>Male</td>
<td>47%</td>
<td>21%</td>
<td>32%</td>
</tr>
<tr>
<td>Female</td>
<td>55%</td>
<td>16%</td>
<td>29%</td>
</tr>
</tbody>
</table>
Post Assessment Characteristics of Participants

The post-assessment included only 132 participants. Therefore, 71% of participants completed both the pre and post assessment. Demographic characteristics are described in Table 8. Demographic characteristics of participants who completed the post assessment mirrored those who completed the pre assessment with the exception that more participants in the post assessment group self-identified as Black (3% to 5%). As in the pre assessment group, over three out of five participants did not provide clinical care. Additionally, years of experience in public health was the same pre and post.

Table 8
Post Assessment Demographics

<table>
<thead>
<tr>
<th>Quality</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>11</td>
</tr>
<tr>
<td>Females</td>
<td>86</td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>3</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>89</td>
</tr>
<tr>
<td>Non-white</td>
<td>6</td>
</tr>
<tr>
<td>Black</td>
<td>5</td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>5</td>
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<tr>
<td><strong>Ethnicity</strong></td>
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<td>21</td>
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<tr>
<td>Non-Hispanic</td>
<td>72</td>
</tr>
<tr>
<td>Prefer not to respond</td>
<td>7</td>
</tr>
</tbody>
</table>
As in the pre assessment, participants were asked to respond to the questions related to unconscious bias and intention to practice culturally appropriate healthcare. Regarding the question “Unconscious bias might affect some of my clinical and/or non-clinical decision making). Difference in responses by gender and race are outlined in Table 9. In the post assessment, there were no significant differences between males and females regarding the perceptions of unconscious bias (p = .141) with more males than females disagreeing with the statement (60% vs 32% disagreeing or unsure 13% vs 2%) . In the pre assessment, males disagreed with the statement more frequently than females (p = .00). Regarding the question: “I intend to change how I interact and/or practice culturally appropriate care delivery with racially diverse patients/clients in the future, differences in response to this question by gender and race are outline in Table 10. In comparing responses between males and females regarding to their intention to practice culturally appropriate care delivery responses between males and females were not significant (p = .35). The highest levels of education obtained by participants was also considered (see Figure 3). There was a significant difference (p = .01) between groups of highest levels of education and agreeing with the statement that unconscious bias might affect their decision making. There was no significant difference found (p = .46) in comparing the highest level of education to intent to practice culturally appropriate healthcare delivery. The average CARES score was 31.1 out of a possible 40 points post assessment. The post assessment mean range of individual question scores was 2.91 to 3.44. Pre to post assessment comparisons of select metrics are further expanded in the Discussion section (see Table 11).
Figure 3. Highest Level of Education Pre Assessment

Table 9

Post Assessment Responses by Race and Gender: Unconscious Bias Might Affect Some of My Clinical And/or Non-Clinical Decision Making

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
<th>Unsure</th>
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</thead>
<tbody>
<tr>
<td>White</td>
<td>56%</td>
<td>32%</td>
<td>13%</td>
</tr>
<tr>
<td>Non-White</td>
<td>17%</td>
<td>67%</td>
<td>17%</td>
</tr>
<tr>
<td>Male</td>
<td>27%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td>Female</td>
<td>56%</td>
<td>32%</td>
<td>13%</td>
</tr>
</tbody>
</table>
Table 10

Post Assessment Responses by Race and Gender: I Intend to Change How I Interact And/or Practice Culturally Appropriate Care Delivery With Racially Diverse Patients/ Clients in the Future

<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Disagree</th>
<th>Unsure</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>67%</td>
<td>12%</td>
<td>21%</td>
</tr>
<tr>
<td>Non-White</td>
<td>67%</td>
<td>25%</td>
<td>8%</td>
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<tr>
<td>Male</td>
<td>47%</td>
<td>33%</td>
<td>20%</td>
</tr>
<tr>
<td>Female</td>
<td>60%</td>
<td>12%</td>
<td>29%</td>
</tr>
</tbody>
</table>

Discussion

While 29% of participants in the pre assessment did not complete the post assessment, the demographic distribution of pre and post test samples was similar. Matching data pre and post training intervention was not possible so analysis was done assuming independent samples. This is a commonly accepted methodology for analyzing pre and post data that cannot be matched (Creswell, 1996). According to Beach et al. (2005), less than 10% of public health workers have formal educational or training in the field of public health. While this sample of this study, 56% of participants had either a Bachelor’s or Master’s degree. However, this study did not determine the field of study. Participants represented both rural, urban and suburban zip codes, however, there was not enough power in the data to do analysis by geographic location and CARES score for each RUCA code represented.
Table 11

Pre and Post Assessment Means of Public Health CARES Scores by Question

<table>
<thead>
<tr>
<th>Pre and post assessment Public Health CARES question</th>
<th>Pre assessment mean (4 possible points per question)</th>
<th>Post assessment mean (4 possible points per question)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I know how to provide culturally sensitive clinical or public health preventive services to diverse populations.</td>
<td>2.99</td>
<td>3.03</td>
</tr>
<tr>
<td>I know about social and cultural characteristics of diverse racial and ethnic groups.</td>
<td>2.98</td>
<td>2.98</td>
</tr>
<tr>
<td>I am aware of disparities in care based on race and ethnicity.</td>
<td>3.03</td>
<td>3.07</td>
</tr>
<tr>
<td>I know about the historical and contemporary impact of racism, bias, prejudice, and discrimination in health care experienced by various population groups in the United States.</td>
<td>3.02</td>
<td>3.08</td>
</tr>
<tr>
<td>I am aware of racial, ethnic, or cultural stereotypes that impact patients/clients.</td>
<td>3.02</td>
<td>3.10</td>
</tr>
<tr>
<td>I am comfortable caring for patients/clients from culturally diverse backgrounds.</td>
<td>3.24</td>
<td>3.19</td>
</tr>
<tr>
<td>I am comfortable advising a patient/client to change behaviors or practices related to cultural beliefs that impair one's health.</td>
<td>2.73</td>
<td>2.91</td>
</tr>
<tr>
<td>I am able to control my personal bias in relating to people that are from different backgrounds.</td>
<td>3.21</td>
<td>3.19</td>
</tr>
<tr>
<td>If I acted prejudiced toward racial minority populations I would be concerned that others would be angry with me.</td>
<td>3.11</td>
<td>3.09</td>
</tr>
<tr>
<td>I attempt to act in non-prejudiced ways toward racial minority populations.</td>
<td>3.42</td>
<td>3.44</td>
</tr>
</tbody>
</table>
A major finding is that there was not a significant difference between pre assessment and post assessment CARES scores. Mean scores of questions are included in Table 11. There seemed to be a ceiling effect in CARES scores. A ceiling effect is “a measurement limitation that occurs when the highest possible score or close to the highest score on a test or measurement instrument is reached, thereby decreasing the likelihood that the testing instrument has accurately measured the intended domain” (Salkind, 2010, p. 132). The ceiling effect was also shown in several of the questions.

Data on additional variables included in the Public Health CARES Tool identified promising trends. The perceptions of unconscious bias demonstrated a positive difference from pre to post related to the highest levels of education of participant. Participants in the pre test showed a non-significant difference in responses based on highest levels of education ($p = .16$) and a significant difference in the post assessment ($p = .01$). Notably, there was also a significant difference of males disagreeing with the statement in the pre assessment (60% vs 32%). More participants, male and female selected unsure in the post assessment (13% vs 2%) which may indicate that these participants are considering the content provided on unconscious bias, but are still not sure how it relates to their own perceptions of bias. In terms of the intention to practice culturally appropriate care, there was a positive shift from $p = .635$ in the pre assessment and $p = .47$ in the post assessment, although neither value pre or post was significant.

There may have also been characteristics of this population that caused the high Public Health CARES scores in the data. This sample had high levels of education. Additionally, there may have been a strong self-report bias in asking questions related to topics included in both the pre and post assessment that influenced the high CARES score that was demonstrated prior
to the CCT intervention. There is also a selection bias where health department administrators opted to participate or not. Those administrators that encouraged their staff to participate in this training may already encourage a cultural of providing culturally appropriate healthcare delivery among their staff.

Finally, it should be noted that the participant population was overwhelmingly White. However, an interesting trend was that the percentage of participants that identified as Black increased pre to post assessment. It would be important to determine additional characteristics associated with race that supported the completion of the intervention and the pre and post assessments. There may be important factors that encourage the completion of this type of training by race and this should be further studied. There was also a decrease in post assessment participants preferring not to respond to race categories, therefore it is possible that some non-white participants chose to select their race pre to post assessment. This trend was not seen in other demographic variables such as education level or gender.

**Limitations**

There are several limitations of this study. First, using aggregate data rather than matching pre and post responses of individual participants hindered the evaluation of the intervention in various subpopulations. Unmatched (de-identified) data was used in this study because it was not clear if local health department participants would be comfortable in responding to questions on topics such as prejudice, bias and knowledge of working with diverse populations if their responses were identifiable. Second, in this pilot study, it was not clear if administrators allowed their staff to use work time to complete the pre assessment, CCT training, and post assessment. This may have impacted the post assessment response rate
perhaps limited the number of cases available to analyze. The use of independent pre and post assessment samples limited the power of the analysis. A larger sample size may have been useful.

It is important to note that in the CCT training and the assessment tools, the terms unconscious bias and implicit bias were used interchangeably to describe the same concept. This is because the IAT was used as a way to measure implicit bias and the assessment question on this topic was derived from a previous study that used the term unconscious bias. There may have been confusion because of the interchangeable use of the term, and participants may not have fully understood the question in the assessments as it related to the training content in intervention. Even though previous content validity did not highlight this issue (see Chapter 2), there may have been confusion because of the interchangeable use of the terms.

A confounding factor that should be considered is the prior participation by study participants in other types of CCT or health disparities training. A question such as “have you participated in any other type of CCT training in the past, please describe” would have be a useful addition to the demographic and other participant characteristic section of the tool.

Future Studies

Future studies should consider the overall study design methodology. A preferred method in determining the effectiveness of the assessment in general would be to conduct a randomized study in which one group received the pre assessment and intervention only, one received the intervention and post assessment only and one received the intervention and pre and post assessment (only). Although the assessment tool was found to be valid for content,
randomization of the assessment would provide more robust findings of not only the impact of the intervention, but of the use of the current assessment tool. Another approach to consider is to re-develop the assessment to serve as a post-assessment learning quiz that tests on specific content included in the CCT training intervention rather than on general topics/concepts related to culturally appropriate healthcare delivery. The assessment tool could also include additional measures. For example, measuring the concept of empathy may be useful to include as part of the assessment tool as this may help identify participants who are willing to change behavior based on additional factors. Additionally, including a question related to how participants plan to change behavior may help to better identify the influence of the training on learned strategies to engage in culturally appropriate healthcare delivery.

The training modules should also be reconsidered. Although the modules included in this training were identified through a literature review and through an additional study (Hinkle, 2018) the inclusion of these models was not informed by perspectives of the target training population. Future work should include an assessment of public health workers that identifies gaps in their training knowledge/awareness and attitudes/engagement prior to the development and implementation of a CCT.
CHAPTER 4

PRACTICAL LESSONS LEARNED FROM PILOTING THE PUBLIC HEALTH CARES TRAINING

Abstract

Cultural Competency Training has been identified as one way to promote the delivery of culturally appropriate healthcare. However, there are many differences in content and methods of delivery of CCTs. CCTs do not always meet the training needs of all healthcare disciplines, such as the public health workforce, that interact with diverse patient populations. The purpose of this case study analysis was to examine the development, implementation and evaluation of the Public Health Culturally Appropriate Readiness and Engagement Score (Public Health CARES) Training, a CCT that was specifically designed for public health workers. Seven modules were included in the CCT: introduction, pre assessment, four content-based modules (Personal Stories, Health Disparities, Structural Racism, and the Implicit Association Test), and a post assessment. These modules were bundled into an online educational and training platform called Teachable. Beta testing of the CCT was completed by volunteers representing multiple sectors and education levels. After Beta testing was completed, the training modules were modified. Of 95 local health department administrators in a Midwestern state who were contacted in an effort to recruit participants, 13 administrators agreed to offer CCT participation to health department employees. The majority (N=8)
represented rural-based health departments. The rest (N=5) represented suburban-based health departments. A total of 187 participants completed the pre assessment and 132 participants completed the post assessment. Various methodology issues were identified in piloting the CCT including need for input from public health workers as part of the planning process, accessibility, content delivery, and generalizability of the assessment tool. Additional Beta testing should have been completed prior to the relatively large scale pilot testing of the CCT.

Significance of the Problem

While many disciplines have been the focus of CCT in the literature, public health workers remain one of the most under-studied disciplines in terms of assessing the level of CCT and measuring the effects of public health-specific training. Most CCTs provide education on general concepts of cultural competency which aim to increase provider knowledge of cultural issues and/or increase the foreign language proficiency of providers (Lie et al., 2011). An accepted model for CCT among healthcare providers includes the provision of training to address cultural awareness, cultural knowledge, culturally appropriate patient–provider interactions and the desire/motivation to serve diverse populations (Campinha-Bacote, 2002). Kripalani, Bussey-Jones, Katz, & Genao (2006) described that most CCT focuses on either knowledge enhancement or attitude changes through skill development. Most trainings are designed to increase both knowledge and awareness through face- to- face or hybrid (i.e.,face-to- face and online) methods (Renzaho, Romios, Crock, & Sønderlund, 2013). However, the main goal for CCTs is to promote culturally appropriate healthcare delivery. This case analysis provides perspectives on the development, implementation, and evaluation of a CCT that was
developed to train public health workers on culturally appropriate healthcare delivery and related concepts including unconscious/implicit bias.

Culturally Appropriate Healthcare Delivery

Factors of culturally appropriate healthcare delivery are associated with provider attitudes towards diverse patient/client panels (Devine, 1989). Prejudicial attitudes in any setting can be related to a group’s influence on an individual (Dovidio et al., 1997; Fazio et al., 1995). This is of particular significance in a healthcare setting where a provider’s attitude toward patients may be influenced by attitudes of his or her colleagues or co-workers. If prejudices exist in the context of the group practice environment, then these attitudes are likely to be adopted by an individual. There are many complexities involved in the mitigation of group influences on individual providers in a healthcare setting.

Cultural Competency Training

CCTs have been identified as one way to promote the delivery of culturally appropriate healthcare. However, there are many differences in current trainings regarding content and methods of delivery to participants. CCTs do not always meet the training needs of all healthcare disciplines that interact with diverse populations, such as the public health workforce (Betancourt et al., 2016). CCTs also are not fully developed to address many of the complex factors that contribute to achieving cultural competency such as the role of implicit bias. Implicit bias has been shown to play a significant role in the decision-making process of healthcare providers that interact with culturally diverse patient populations. In addition, there is a lack of training that addresses the role of group-related dynamics can play a role in the
likelihood of a person engaging in prejudicial/culturally appropriate healthcare delivery. Therefore, a new training specifically for public health workers, the Public Health Culturally Appropriate Readiness and Engagement Score (Public Health CARES) training, was developed to address the gaps in current trainings. Public Health CARES training was based on a theoretical framework, the Social Cognitive Theory (SCT), that address some key factors identified as contributing to culturally appropriate care delivery including bias. The SCT explains that the cognitive processes of an individual, including knowledge and attitudes, are influenced by social norms and related experiences. This theoretical perspective assumes that individuals can learn to adapt or change their perspectives based on modeling of the behaviors of others in their environment.

**Training Components**

The Public Health CARES training included existing training components that were identified through a previous study that reviewed 44 CCT programs in the United States (Hinkle, 2018). Although the majority of the programs reviewed in this study were affiliated with the national Area Health Education Center Network Program (AHEC), several were stand-alone programs. The following programs were identified as being relevant to public health workers. Factors considered included accessibility for dispersed workers and appropriateness of training topics.

**Personal Stories**

Chapman and colleagues (2017) demonstrated a proof of concept in the inclusion of personal stories/vignettes in training for medical students. The personal story that was included...
in the Public health CARES training was from the Commonwealth Fund’s Worlds Apart series (Grainger-Monsen et al., n.d.). The vignette featured a story of Alicia Mercado, a Hispanic woman living in New York City who is facing significant social and economic challenges.

According to the World’s Apart Facilitators Guide

She is a 60-year-old woman from Puerto Rico who has lived in New York City for 18 years in the same low-income building. She raised her family here and devoted herself to keeping a good home. As she has gotten older, her day-to-day life has begun to revolve around her chronic illnesses—diabetes, hypertension, and asthma, among others. Since her mother suffered from diabetes complications (and eventually died of cancer), Mrs. Mercado is well aware of the impact that medical conditions can have, especially when left untreated. Still, she has concerns about taking too much medication, and feels that by using home remedies together with the prescriptions she can do better than with either alone. She has recently started to see a new doctor who has found her to be a challenging patient due to poor diabetes control and frequent missed appointments. What her doctor doesn’t realize is how Alicia Mercado’s life has been turned upside down by a corrupt apartment manager forcing her out of her building, causing her to become depressed and to lose the will to keep up with her health care. (Grainger-Monsen et al., n.d., p. 25)

This vignette also highlights the importance of culturally appropriate communication and the influence of factors related to the social determinants of health on health outcomes for racial minority populations

**Health Disparities**

The training that was identified to be used regarding health disparities came from Georgetown University’s National Center for Cultural Competence. This training included an overview of health disparities and how disparities can contribute to poor health outcomes for diverse patients. The training from NCC on health disparities is available online. However, it was noted upon further review that the resources available on the NCC’s website are required to be used in its entirely and content cannot be amended/tailored to fit new training models.
Upon this finding, the link to health disparities from the NCC was included as a full resource/reference for further information on health disparities and a new training module was created using evidence-based on health disparities information to share with program participants as part of the training module. In order to make this training module relevant to public health workers additional information was included regarding the role of health departments in addressing health disparities.

**Structural Racism**

The University of Albany’s School of Public Health’s training on structural racism was included in the training. Their training on structural racism not only provides information on bias and structural racism but can also support increasing a providers’ self-efficacy to mediate issues by increasing the understanding of working with socially dissimilar patients (University of Albany, 2015). This training is offered as part of a free, online series called Public Health Live, and includes accompanying handouts/slides.

**Implicit Association Test**

The IAT was included in the CCT intervention. The IAT is widely accepted as the standard measure of implicit bias across disciplines (Blair et al., 2013). Greenwald et al. (1998) developed the IAT to reduce responder bias in order to assess implicit bias. According to Fazio and Olson (2003), the IAT “assesses the strength of an association between a target concept and an attribute dimension by considering the latency with which participants can employ two response keys when each has been assigned a dual meaning” (p. 299). This test can also be used as an intervention to increase awareness on implicit bias (Hahn, Judd, Hirsh, &
Blair, 2014; Hofmann, Geschwendner, & Schmitt, 2005). This test provides objective response to prompts of race categories. The IAT participant’s task is to categorize stimuli as they appear on the screen (Greenwald & Krieger, 2006). The IAT can be used to determine implicit bias among a number of constructs including age, race, skin tone and religion. The IAT is often used to determine a range of implicit bias (Greenwald et al., 1998). According to McConnell and Leibold (2001),

IAT has become a widely-used instrument to measure attitudes in general, and prejudices toward groups in particular. It assesses attitudes by having people quickly categorize stimulus words using two response keys. In racial IAT studies, the stimulus words are names that are racially stereotyped (e.g., Jamal and Sue Ellen) or adjectives that have evaluative connotations (e.g., wonderful and disgusting). (p. 435)

The IAT is publicly available through Project Implicit from Harvard University. According to the program’s website,

Project Implicit is a non-profit organization and international collaboration between researchers who are interested in implicit social cognition - thoughts and feelings outside of conscious awareness and control. The goal of the organization is to educate the public about hidden biases and to provide a “virtual laboratory” for collecting data on the Internet. (Project Implicit, 2011, para. 1)

Project Implicit also supports a number of other IAT tests based on other categories other than race including age, gender and religion.

Public Health CARES Training Modules

The Public Health CARES training modules were combined using an online training and education platform called Teachable. After an extensive review of online training platforms, I determined Teachable to be the most effective and efficient option for the Public
Health CARES training for several reasons. Teachable allows the course/training facilitator to easily customize content without the use of a web consultant that can be uploaded and integrated into one training program. Prospective participants can register with Teachable to access a specific course/training. Participants can also easily access a certificate of completion after all training modules after a specific course/training is completed. Certificates of completion can be downloaded anonymously via Teachable through an integration of a separate web application called Webmerge. The use of Webmerge requires a subscription fee to use the certificate generator service. As with most online training platforms, there is a fee associated with hosting a course/training via Teachable.

Seven modules were combined for the Public Health CARES training including the introduction, pre-assessment, four content-based modules (Personal Stories, Health Disparities, Structural Racism, and the Implicit Association Test), and a post assessment. The statement of informed consent was included as part of the introductory module of the training. After reviewing the statement, a statement of agreement to the informed consent was required to be verified by the participant prior to starting the training. Each module included an overview in written form and voiceover recording that was developed by me using QuickTime. The pre and post assessment modules included an overview of the respective assessment and a link to an anonymous Qualtrics survey to the specific assessment in that module. After the pre-assessment was complete, the participant was able to advance the next training module. Participants could stop and start the training modules at any time. The total completion time for the training was approximately 90 minutes. A front-end view of training components of the introduction section and embedded link on structural racism are included in Figures 4 and 5.
Figure 4. Introduction Module View

Figure 5. Structural Racism Module View
Testing of Training Modules

Prior to implementation, the training module was Beta tested by seven volunteer individuals representing multiple sectors and education levels. This testing including each volunteer participant registering for the training and completing the training modules. Beta testing of the online training modules demonstrated the need to change several aspects of the training. First, three individuals experienced issues with registering for Teachable during the initial sign-on process. It was noted that these individuals had the registration link sent to their email spam inbox, and therefore it was difficult for them to find the registration link. All of the initial testers noted that the training required their browser to have multiple windows open at one time which created confusion and the need to go back and forth to access multimedia training content in another screen. Two participants noted issues with the screen advancing the progress of their training where the Teachable platform did not record the completion of the module. The recording of the completion of modules is important as it trigged the WebMerge file to generate a certificate of completion after all of the modules and assessments were completed by the participant. A universal request of all beta testers was to have a separate, Word document copy of detailed instructions available for participants to reference as they move through the training. The instruction document could be used as stand-alone instructions or in addition to the detailed instructions already provided online in each specific training module.

Changes to the training were made based on the feedback of the Beta testers. First, the requested step by step instructions were created (see Appendix I). The instructions included recommendations for registration. After troubleshooting the lack of recording the completion of
each slide, it was identified that participants needed to select complete and continue after each training module rather than use the advance arrow to move through the trainings. This requirement was noted in both the text instructions included in each training modules as well as the separate step by step instructions. Second, the format of various multi-media components was adjusted to work-around the browser issues where multiple windows were required to be open in order to access training content.

**Distributing the CCT**

The implementation of the Public Health CARES training was approved by the Institutional Review Boards of Northern Illinois University and the University of Illinois College of Medicine. A recruitment email and recruitment flier were sent to all local public health administrators (N = 95) in one Midwestern state (see Appendices C and D). Thirty-five local health department administrators followed-up expressing interest in the training program. I held follow-up phone conversations, face to face and/or virtual meetings to address questions from interested administrators. After these meetings, 20 health department administrators agreed to further review the training and/or have their staff participate in the training. After a final review of the training, 3 administrators declined to participate due to various factors including lack of dedicated staff time to complete the training or the perception that the training was too academic and/or research focused for all levels of staff/the training. One additional health department administrator indicated that the department had undergone accreditation in the time since they had initially expressed interest in participating in the Public Health CARES training and went with a different focus for their staff training. Several (N = 7) of the health departments that initially expressed interest in the training and followed up with additional
questions did not respond after two follow-up attempts were made to participate. One of the
health department administrators requested copies of the IRB approval letters (see Appendix J).
The same administrator sought and received board of health approval to participate in the
Public Health CARES training. During a 3-month period in 2018, staff from 13 local health
department participated in the Public Health CARES training.

**Implementation of Training**

Several additional issues were identified after the first round of participants (N=40)
completed the Public Health CARES training. First, several participants found that they were
blocked from accessing various links, including YouTube, on their organization’s firewall. I
remedied this issue by embedding links that were not associated with the firewall issues, where
possible. In addition, I worked with several the health departments’ IT departments to
temporarily remove firewalls for the staff experiencing issues. Despite the quick response to
this issue, not all participants were able to access the full scope of the content during their
initial log-in to the training. Others still reported experiencing difficulty in logging in in order
to create a registration profile. It was later identified that these participants had forgotten their
username and/or password associated with their work emails and had to go through additional
internal IT processes to have their information reset prior to successfully registering for the
Public Health CARES training. Several other staff reported to their supervisors’ confusion with
the instructions to complete the Implicit Association Test. The training link was sent out the
remaining interested departments after the implementation of the training was complete at the
first health department and all issues from that implementation process were addressed.
Participant Feedback

The post assessment asked for open-ended feedback related to the overall experience with the training. Responses were recorded anonymously. Feedback ranged from “this is great!” to “it was ok.” It should be noted that administrators who agreed to have their department participate in the training all expressed interest and communicated a need for this type of training for their staff. Several comments were made questioning the accuracy of the IAT as a way to measure implicit bias. For example, one participant commented, “don’t like to compare by black and white and also for good and bad. The selection of choices to determine with black and white people were not the best.” However, other participants noted that the IAT was their favorite part of the training. Some responses indicated that the it may have been more confusing to try and follow a separate document with step by step instructions for training completion than trying to follow along in the online version. This was a different perspective than what was shared during the beta testing of the training. Several comments also indicated confusion regarding the need to change between browser windows (this was primarily a comment from the first round of implementation). However, one participant noted, “was difficult for me in the beginning but when I the hang of it was good, I like it. thank you”. Other comments indicated a need to continually adjust the volume on their computers in order to hear the voiceover recordings in each training modules. The story of Alicia Mercado was a highlight of the training with comments such as “I appreciated the story and thought that made the application more realistic”. 
Several important lessons were learned during the implementation of the Public Health CARES training. The original intent of an exclusively online training was to provide a flexible, self-paced training program for busy public health professionals. Based on the overall feedback from the post assessment and reflective inquiries to participating public health department administrators, a face-to-face or hybrid training may be preferred for this population. Implementing a face-to-face or hybrid training module may help to address some of the technical issues experienced throughout the implementation of the online training program. Additionally, offering more direct interaction could alleviate some of the issues experienced by training participants that had various degrees of comfort navigating technology. Although the Public Health CARES training on Teachable was beta tested and shown to be user-friendly, some participants still struggled with navigating between and among training modules. One participant commented, “too much jumping around it would be wonderful if this was all in one place and we click from slide to slide. Also in person training would be better than electronic training” Additionally, providing a strictly online training does not allow for interactions between participants, which may be beneficial in addressing the group dynamics of mediating bias as demonstrated through the SCT.

The personal vignette of Alicia Mercado was noted in the open-ended feedback as being a meaningful component of the training. However, it may be more beneficial to include a personal vignette that is representative of the demographics served by a local health department. Although seen as meaningful, the story of Alicia Mercado takes place in a very urban environment, unlike any location served by the local health departments that participated
in the Public Health CARES training program. Despite the different profile, Alicia’s story still received positive feedback from the training evaluation by participants.

In regards to the structural racism module, there was some confusion among participants regarding what they were tasked to do with the available webinar. The instructions both online and on the Word document (see Appendix I) indicated that participants were asked to review the handouts on structural racism and use the included webinar as a guide, as needed. The instructions clearly stated the participant does not have to watch the webinar in its entirety. However, it appears based on the open-ended feedback that many participants watched the entire webinar and indicated how long the webinar took as part of the overall training.

The IAT seemed to be challenging for many participants who primarily had a difficult time navigating the many instructions required to access the online IAT on race. This is the only known online version of the IAT available. Therefore, it may be beneficial to either walk participants through the IAT in a face-to-face or hybrid training methodology or develop an IAT that is more accessible to the general population. The IAT that was used to complete this training is focused on Black and White differences in race preference. However, the majority of clients served by the participating health departments in the Public Health CARES training are Hispanic and Non-Hispanic White. Project Implicit currently does not offer a race IAT that is based on these two categories of race. It may be more meaningful/beneficial for participants to take an IAT that is focused on the race categories primarily served by their respective local health departments. This may provide a more customized approach to identifying implicit bias among training participants.

The cost of producing and implementing a training like the Public Health CARES on this scale may prohibit the distribution and/or further development of trainings using the same
modules that respond to the unique training needs of specific healthcare disciplines. The cost associated with the training included the monthly subscription to Teachable, the monthly subscription to WebMerge, and the one-time licensing agreement to distribute The World’s Apart series. The cost to maintain an online survey tool such as survey monkey or Qualtrics would also need to be considered as an expense if this training were to be replicated in a similar scope outside of an academic institution.

Most importantly, prior to any development of training modules or Beta testing, an important step should be to survey local health departments prior to the implementation of a CCT. This, more participatory methodology, would be useful to determine the preferred method of delivery for these type of CCTs and to better understand the types of trainings that local health departments have conducted related to CCT to ensure that there are not duplication of efforts or training content and that specific gaps in training are better identified among the target population. This pilot, while based on theory and literature, did not include participatory data from public health workers in the planning stage. This assessment survey could be applied to other disciplines to better understand if gaps are similar across disciplines and if the development of a more universal CCT can be accomplished. Additional testing of the training modules is needed before any type of CCT is offered as a pilot study. Ideally, Beta testing would be done on each module separately with the population that will be taking the training. Then, Beta testing could be done on integrated modules after each module has been tested and amended as appropriate.
Future Studies

The development of a cultural competency training aimed at providing insight into key concepts of culturally appropriate healthcare delivery is ever-evolving. This pilot study provided valuable lessons learned regarding the development and implementation of a CCT specifically for public health workers. Revision of the online modules to improve accessibility or a hybrid or face-to-face delivery methodology should be considered in future work in order to address some of the technology concerns expressed by program participants in the pilot study. Hybrid or face to face delivery would provide an opportunity for advanced training and education on training modules in real time to program participants and would help to reduce the lag time in addressing any technology-related issues in participating in the program. One participant indicated that, “content would be more useful if it containing specific information on how to interact with certain cultures” however, Burgess and colleagues (2007) identified that CCTs that aim to educate participates in this way can often lead to the creation of further stereotypes against diverse populations.

While the goal of the Public Health CARES training pilot, to address non-traditional aspects of culturally appropriate healthcare delivery such as implicit bias and structural racism through a training designed for the public health workforce, was not achieved, much was learned. There should have been more Beta testing done such a complex training prior to widespread piloting distribution. The personal vignette was noted by the open-ended feedback of participants as highlight of the pilot study of the Public Health CARES training. Future iterations of the Public Health CARES training will work to independently develop a personal vignette that is reflective of the population that is served participant trainees. There were mixed
reviews from the open-ended feedback of pilot study participants on the impact of the IAT. As previously noted, the current IAT on race is only available using Black and White race categories. Additional work should be done to develop IATs that are also more reflective of the populations served by the participants of the Public Health CARES training program.

Initially, there was significant buy-in from many local health department administrators to participate in the Public Health CARES training program. However, after further review of the training, several administrators declined to participate because of the perception that the content covered was too research/academic focused and not suitable for all levels of staffing. This perspective was developed because of the IRB requirements of the current version of the Public Health CARES training as it was implemented as a research project.

Accessibility issues occurred because some participants reported difficulty in navigating through the training and had confusion following both the Word version of instructions and the instructions that were included online within the module. Future work should work to ensure that the wording used in instructions is clear, focused, and does not promote the perception that this is an academic training for community participants. The goal should be to create a training environment that is responsive to practice-based needed while using an academic framework to ensure human subject protections and rigorous research methodology is followed.
CHAPTER 5

SUMMARY OF FINDINGS

Research suggests that it is important for providers to adapt to the cultural needs of patients. Engagement of healthcare providers of all levels through training can work to improve patient/client satisfaction (Cooper et al., 2012; Fondacaro et al., 2005; R. L. Johnson et al., 2004; Saha et al., 1999). Increased satisfaction by patients/clients can lead to improved health outcomes. Although CCTs are used to educate healthcare providers on the cultural needs of patients, more work needs to be done to fully assess and address contributing factors that prevent culturally appropriate care delivery in practice-such as implicit bias. There is not a standardized evaluation tool for cultural competency standards across disciplines. This is especially an issue among public health workers that have been historically excluded from evaluated cultural competency training programs in the literature. Additionally, published CCTs that have been evaluated often do not include public health workers.

This research was based on a model of culturally appropriate healthcare delivery that I developed (see Figure 1). This model aims to describe the mechanism by which a particular CCT training that encompasses key factors of culturally appropriate healthcare delivery can be used to increase awareness and knowledge and thereby improve care to diverse populations. The ultimate goal of this model is to create a healthcare environment in which healthcare providers are more aware of the needs of their diverse patients, and patients are more satisfied
Chapter 2: Content Validity and Test-Retest Reliability Testing of the Public Health Culturally Appropriate Readiness and Engagement (Public Health CARES) Tool

The first manuscript explored the process of the development of the assessment tool for the Public Health CARES Tool as well as the analysis of validity and reliability testing of this tool. The tool was developed by integrating previously validated content from several assessment tools for topics including implicit bias, prejudice and cultural competency. For the purpose of the content validity testing for this study, experts in the field were recruited to review the integrated assessment tool to provide qualitative feedback through a one-group non-experimental study design. The comments made by the experts in the content validity testing supporting the overall content of the tool. One important note is that there were no comments made about adding or deleting content. Suggestions were more general and included suggestions for general organization of content and for revising one question related to unconscious bias. This scale became the Public Health CARES score that aimed to measure the knowledge/attitudes and awareness/engagement of participants in the Public Health CARES training.

Reliability testing was completed using a one group test-retest study design on the assessment tool after revisions were made based on the results of the content validity testing. Participants of the test-retest reliability testing were recruited from a convenience sample of workers that had similar backgrounds and experiences to the general public health worker population. Test-retest reliability testing was conducted by administering the pre assessment to
the sample of participants and administering the post assessment to the same sample one week later. Results of the test-retest reliability testing demonstrated that all questions in the Public Health CARES assessment had at least acceptable reliability pre to post. The valid and reliable pre and post assessments were then used as the pre and post tool.

Limitations of this study included the qualitative nature of content validity testing (although qualitative content validity testing is a standard method; Yaghmale, 2009). Another method could include a quantitative rating system in addition to asking participants to provide open-ended feedback. Another limitation of this study is the sample that was used in the reliability testing. Although the participants represented similar positions and education levels often seen in a local health department, participants in the test-retest reliability testing were not public health workers. A better approach may have been to use a separate sample of public health workers to complete the reliability testing. However, despite these limitations, the assessment tool was found to be both reliable and valid.

Chapter 3: The Effects of a Cultural Competency Training on Knowledge/Awareness and Attitudes/Engagement: Public Health CARES

The second manuscript of this dissertation described the process of the recruitment of participants to the CCT training and the outcome of the evaluation of the training. The first part of this study involved Beta testing of the developed CCT intervention, which was developed as an online, self-paced training. Beta testing occurred with a volunteer sample of participants that represented multiple education levels and disciplines. Adjustments were made to the training an online platform based on feedback from the Beta testing. The second part of this study included the recruitment of local health departments to participant in the CCT intervention. After a
recruitment process which included outreach and discussions of the project with chief administrators of local health departments in one Midwestern state. A total of 13 health department administrators agreed to share the training with their staff. A total of 187 participants completed the pre assessment and 132 completed the post assessment. Analysis was completed on the recorded pre and post assessment responses. One question in the post assessment prompted participants to respond with their overall thoughts and feedback of taking the CCT training.

Analysis of data only demonstrated a small number of significant findings related to perceptions of bias. It was found that there was a significant difference between the responses of males and females in the pre assessment on perceptions of unconscious bias. In the pre assessment, men were more likely than women to disagree with the statement that unconscious bias can affect their clinical/non-clinical decision making. Male responses to this statement changed in the post assessment with more men selecting that they agreed to the statement or were unsure. This demonstrates a shift in perception pre to post assessment. It was also found that there was a significant difference in responses to the statement on unconscious bias by levels of education in the post assessment. This could demonstrate that those with higher levels of education developed further insight on concepts of bias from the intervention. Other variables, such as the intention of participants to practice culturally appropriate healthcare were not significant by education or gender pre to post.

The results demonstrated opportunities for future studies to consider before the implementation of similar trainings. First, a ceiling effect was demonstrated through the responses of the questions that made up the CARES score. The ceiling effect demonstrated that the participants in the CCT training already ranked high in terms of their knowledge/awareness
and attitudes/engagement of culturally appropriate healthcare delivery prior to their participation in the CCT. Therefore, it was difficult to analyze the overall impact or influence of the CCT training on knowledge/awareness and attitudes/engagement of participants. It was also unclear if the participants in the Public Health CARES training had already completed other types of CCT as part of their work in their respective local health department. It should also be noted that the demographics of the participants in the Public Health CARES training had high levels of education (Bachelor’s and Master’s degrees). In considering may be that this population had more formal education and training on health disparities, implicit/unconscious bias and other concepts that were include in the pre assessment, CCT intervention and post assessment.

A noted limitation in the study was that chief administrators were the first point of contact for the recruitment of the participants to the study. There may be a selection bias among administrators that agreed to have their staff participant in the study were already providing organizational policy or other forms of education on cultural competency and therefore had a baseline knowledge of CCT. Another limitation is the use of the pre and post assessment. The self-report nature of the CCT assessment may have promoted a responder bias. This could have been another factor in the ceiling effect viewed in the pre assessment responses of participants. Additionally, there was not a good measure in place, due to the lack of paired data, to identify which participants dropped off in completing the exam pre to post due to the lack of pairing. There was also not enough power in the data to do more detailed analysis on variables such as race and geographic location. In a pilot study format, it would have been useful to follow up with all participants to better understand why some participants did not complete the post assessment.
Future studies should consider randomizing participant groups to determine the effectiveness of the Public Health CARES assessment in measuring the outcomes of the CCT. One methodology future studies should consider is administering the pre assessment and intervention alone, the post assessment and intervention alone and compare those results to the pre and post assessment with the CCT training intervention. Another approach would be to revise the Public Health CARES assessment to serve as a post training learning assessment that directly tests knowledge learned in the training and not the concepts related to CCT that were included in this version of the Public Health CARES assessment.

Chapter 4: Practical Lessons Learned From Piloting the Public Health CARES Training Model

The third manuscript in this dissertation described the process of integrating the CCT training modules included in the Public Health CARES training. The initial step in this process included reviewing the results of a previous study I conducted. In the initial study 44 cultural competency training programs were reviewed. From this review, publicly available training programs were identified to be included in an integrated CCT training such as the Public Health CARES CCT. In this dissertation, the previously identified trainings were integrated using an online training platform called Teachable. The training modules included a personal vignette from the World’s Apart series, an overview and resources on disparities, a handout and optional webinar on structural racism and the IAT. The pre and post assessments were also integrated in this online training module by including links to these tools via Qualtrics. Participants accessed the CCT training by registering through Teachable. After agreeing to the statement of informed consent, participants could start and stop the training modules at any time.
There were limitations identified in the process of piloting the Public Health CARES CCT. These included the delivery method of the training. In qualitative feedback in the post assessment several participants identified that they would have preferred to do a face to face or hybrid (face to face and online) training rather than an online only training. Although the Public Health CARES training was initially designed to be flexible and self-paced, there was a clear disparity in comfortability among participants regarding online trainings. There were several steps involved in the Public Health CARES training and although directions were available in a Word document and within each training module, it was apparent that there was still confusion among participants about how to navigate the Teachable platform. Additionally, there were initial issues with navigating individual firewalls of participating local health departments as some websites, such as You Tube, were blocked. This issue was mediated and/or anticipated before the majority of participants interacted with the training, however, it did impact the overall experience of the first round of participants in the Public Health CARES training. The personal vignette that was included in the CCT focused on a Hispanic woman living in New York City. Although the personal vignette was described as being interesting and effective by CCT participants, it may be a more relevant to show a personal story of characteristics reflected in the populations directly served by the local health department’s region, such as a Hispanic woman in a rural or suburban area. Another suggested amendment for future studies is to develop an IAT that is reflective of the populations primarily served by the local health department participating in the CCT. Currently, the only publicly available IAT on race compares Black and White race categories. The majority of local health departments that participated in the CCT intervention primarily service Hispanic populations. It may also be more relevant to include training on structural racism in general and not include the webinar
from the University of Albany. This webinar included demographic data on the state of New York, where this series is produced. Most participants were able to follow the instructions provided in the modules, however, some participants noted that the webinar included was long. The intent was to include the webinar as a resource (similar to resources included in the Health Disparities training module), however, some participants did not follow the instructions and watched the webinar on structural racism in its entirety. A final suggestion for future studies is to survey local health departments prior to the implementation of a CCT to determine the preferred method of delivery for these type of CCTs and to better understand the types of trainings that local health departments have conducted related to CCT to ensure that there are not duplication of efforts or training content. It would also be of interest to complete a similar training to a different discipline outside of public health.

Summary

Measuring and evaluating impact of a CCT is key to the development of training standards, particularly those trainings that include content related to implicit bias (Greenwald et al., 1998). Additional evaluation measures, such as the CARES Tool, should be further studied. In this dissertation, participants had high levels of knowledge/awareness and attitudes/engagement to provide culturally competent healthcare as measured by the Public Health CARES Tool. This may be due to characteristics of the population included in the training intervention or due to other factors related to the use and generalizability of the Public Health CARES Tool. However, it is important to note that the Public Health CARES Tool was found to be both valid and reliable. Future research should further explore this finding.
One important consideration in conducting this research is the role of motivation and passion related to the researcher. The idea for this research was developed through years of working as a director in a local health department system and observing the daily gaps in culturally appropriate healthcare delivery. Although I identified the need for this type of training both in my own practice experience and through conversations with colleagues in the field, I should have taken care not to expedite the planning, implementation and development of a training program. Instead, it would have better served me and those participating in the training to fully develop each step through a patient process of conducting a needs assessment of the population of focus and Beta testing each component of the assessment and tool. As a practitioner and a researcher, it is important to recognize the need to balance rigorous research methodology while responding to immediate needs in practice. This balance is difficult when timelines are set for academic pursuits, urgent requests from administrators in the field, and meeting grant requirements. However, the dissertation process has taught me the importance of focusing on small steps in research that can ultimately lead to greater outcomes. It is clear based on the overall results that the Public Health CARES Tool and training intervention are not ready to be disseminated to a wider audience in this current format.

Despite these limitations, this study demonstrated that this type of training has potential. Although the issue of addressing individual perceptions of race and culture is complex, an evidence-based training strategy can potentially mediate the impact of biases towards racial minority populations across disciplines. This dissertation provides an important framework and road map for future work in the development, implementation and evaluation of strategies to further develop efforts to improve healthcare delivery for racial minority populations.
REFERENCES


APPENDICES
APPENDIX A

VALIDITY TESTING PRE ASSESSMENT TOOL
This survey has been developed adapted with permission from the Clinical Cultural Competency Questionnaire (CCCQ) developed by Robert C. Like, MD, MS, Professor and Director of the Center for Healthy Families and Cultural Diversity, Department of Family Medicine and Community Health, Rutgers Robert Wood Johnson Medical School. The CCCQ was used in a project entitled, "Assessing the Impact of Cultural Competency Training Using Participatory Quality Improvement Methods," funded by the Aetna Foundation.

1. Gender: _Male _Female

2. Race (Please Select One):
   _American Indian/Alaskan Native
   _Asian
   _Black/African American
   _Native Hawaiian/Other Pacific Islander
   _White
   _More than One Race: Please Check All that Apply
   _Prefer Not to Respond

3. Ethnicity (Please Select One):
   _Hispanic, Latino or Spanish origin
   _Non-Hispanic, Latino or Spanish origin
   _Prefer Not to Respond

4. Current Position Type (Please Select One):
   _Administrator
   _Health Educator
   _Community or Public Health Nurse
   _Other: Please Describe

5. Do you provide clinical care as part of your position?
   _yes
   _no
   _unsure

6. Please select the name of your workplace: (Drop down menu of all Local Health Departments in Illinois)

7. Zip code of workplace: Open field text box

8. Highest Level of Education (Please Select One):
   _High School
   _Associate’s Degree (AA, ADN Etc)
   _Bachelor’s Degree
   _Master’s Degree (MSN, MPH, MS, Etc)
   _Doctorate (MD, DNP, PhD, DrPH, Etc)
   _Other (Please Describe):
9. Number of years of experience in Public Health: *Open field text box*

10. Unconscious bias might affect some of my clinical decisions or behaviors. (Please Select One):
   - agree
   - disagree
   - unsure

11. I intend to change how I interact and/or practice culturally appropriate care delivery with racially diverse patients/clients in the future. (Please Select One):
   - agree
   - disagree
   - unsure

12. I know how to provide culturally sensitive clinical or public health preventive services to diverse populations. (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

13. I know about social and cultural characteristics of diverse racial and ethnic groups. (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

14. I know about disparities in care based on race and ethnicity (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

15. I know about the historical and contemporary impact of racism, bias, prejudice and discrimination in health care experienced by various population groups in the United States (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)
16. I am aware of racial, ethnic, or cultural stereotypes that impact patients/clients? (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

17. I am comfortable caring for patients/clients from culturally diverse backgrounds (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

18. I am comfortable advising a patient/client to change behaviors or practices related to cultural beliefs that impair one’s health. (Please Select one)
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

19. I am able to control my personal bias in relating to people that are from different background (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

20. If I acted prejudiced toward racial minority populations I would be concerned that others would be angry with me.
    - Strongly Disagree (1)
    - Disagree (2)
    - Agree (3)
    - Strongly Agree (4)
21. I attempt to act in non-prejudiced ways toward racial minority populations because it is personally important to me.

__Strongly Disagree (1)
_Disagree (2)
_Agree (3)
_Strongly Agree (4)
APPENDIX B

VALIDITY TESTING POST ASSESSMENT TOOL
This survey has been developed adapted with permission from the Clinical Cultural Competency Questionnaire (CCCQ) developed by Robert C. Like, MD, MS, Professor and Director of the Center for Healthy Families and Cultural Diversity, Department of Family Medicine and Community Health, Rutgers Robert Wood Johnson Medical School. The CCCQ was used in a project entitled, "Assessing the Impact of Cultural Competency Training Using Participatory Quality Improvement Methods," funded by the Aetna Foundation.

1. Gender: _Male _Female

2. Race (Please Select One):
   _American Indian/Alaskan Native
   _Asian
   _Black/African American
   _Native Hawaiian/Other Pacific Islander
   _White
   _More than One Race: Please Check All that Apply
   _Prefer Not to Respond

3. Ethnicity (Please Select One):
   _Hispanic, Latino or Spanish origin
   _Non-Hispanic, Latino or Spanish origin
   _Prefer Not to Respond

4. Current Position Type (Please Select One):
   _Administrator
   _Health Educator
   _Community or Public Health Nurse
   _Other: Please Describe

5. Do you provide clinical care as part of your position?
   _yes
   _no
   _unsure

6. Please select the name of your workplace: (Drop down menu of all Local Health Departments in Illinois)

7. Zip code of workplace: Open field text box

8. Highest Level of Education (Please Select One):
   _High School
   _Associate’s Degree (AA, ADN Etc)
   _Bachelor’s Degree
   _Master’s Degree (MSN, MPH, MS, Etc)
   _Doctorate (MD, DNP, PhD, DrPH, Etc)
   _Other (Please Describe):
9. Number of years of experience in Public Health: Open field text box

10. Unconscious bias might affect some of my clinical decisions or behaviors. (Please Select One):
    
    agree
    disagree
    unsure

11. I intend to change how I interact and/or practice culturally appropriate care delivery with racially diverse patients/clients in the future. (Please Select One):
    
    agree
    disagree
    unsure

12. I know how to provide culturally sensitive clinical or public health preventive services to diverse populations. (Please Select One):
    
    Strongly Disagree (1)
    Disagree (2)
    Agree (3)
    Strongly Agree (4)

13. I know about social and cultural characteristics of diverse racial and ethnic groups. (Please Select One):
    
    Strongly Disagree (1)
    Disagree (2)
    Agree (3)
    Strongly Agree (4)

14. I know about disparities in care based on race and ethnicity (Please Select One):
    
    Strongly Disagree (1)
    Disagree (2)
    Agree (3)
    Strongly Agree (4)

15. I know about the historical and contemporary impact of racism, bias, prejudice and discrimination in health care experienced by various population groups in the United States (Please Select One):
    
    Strongly Disagree (1)
    Disagree (2)
    Agree (3)
    Strongly Agree (4)
16. I am aware of racial, ethnic, or cultural stereotypes that impact patients/clients? (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

17. I am comfortable caring for patients/clients from culturally diverse backgrounds (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

18. I am comfortable advising a patient/client to change behaviors or practices related to cultural beliefs that impair one’s health. (Please Select one)
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

19. I am able to control my personal bias in relating to people that are from different background (Please Select One):
   - Strongly Disagree (1)
   - Disagree (2)
   - Agree (3)
   - Strongly Agree (4)

20. If I acted prejudiced toward racial minority populations I would be concerned that others would be angry with me.
    - Strongly Disagree (1)
    - Disagree (2)
    - Agree (3)
    - Strongly Agree (4)
21. I attempt to act in non-prejudiced ways toward racial minority populations because it is personally important to me.

___Strongly Disagree (1)
___Disagree (2)
___Agree (3)
___Strongly Agree (4)

22. Please describe your experiences and perspectives on any components of the training including the IAT, training content, method of training delivery, etc.

Thank you for your participation in this research for additional information on the IAT or your results please access Project Implicit at https://implicit.harvard.edu/)
APPENDIX C

VALIDITY EMAIL SCRIPT
Dear:
My name is Hana Hinkle and I am currently a PhD candidate in Health Sciences at Northern Illinois University. The purpose of this research is to pilot and evaluate a cultural competency training program for public health workers.

The research study will include evaluation and implementation of a new tool called the Public Health Cultural Appropriate Readiness and Engagement Score (Public Health CARES tool). The Public Health CARES tool is a component of the pre and post assessment tools in this study.

I would like to include your perspectives and feedback as a member of a panel of experts that will review the content validity of the pre and post assessment tool.

In order to participate in this panel, you will be asked to provide feedback via Qualtrics or a word document of the pre and post assessment tool. I am asking that expert take no more than two weeks to provide feedback on the content validity of these assessment tools. I appreciate your consideration and for sharing your expertise.

For questions or additional comments please contact Hana Hinkle, MPH at z111676@students.niu.edu or 815-871-4692.
Faculty Adviser: Dr. Derryl Block (dblock@niu.edu)
Include IRB contact

This project has been approved by the Northern Illinois University Institutional Review Board and the University of Illinois College of Medicine Rockford.
APPENDIX D

RELIABILITY EMAIL RECRUITMENT SCRIPT
Dear:
I am currently a PhD candidate in Health Sciences at Northern Illinois University. My dissertation research is to pilot and evaluate a cultural competency training program for public health workers.

The research study will include evaluation and implementation of a new tool called the Public Health Cultural Appropriate Readiness and Engagement Score (Public Health CARES tool). The Public Health CARES tool is a component of the pre and post assessment tools in this study. Reliability testing needs to be completed as part of the research process. Specifically test-retest reliability testing needs to be completed on this tool. I would appreciate your consideration to participate in the test-retest reliability testing of this tool. If you agree to participate, you will be asked to take the pre-test assessment and one week later take the same test again. You will then be asked to do the same for the post-assessment. Links to the pre and post assessment on Qualtrics will be sent to your email. A follow up email with the retest links of the assessments will be sent via Qualtrics one week after the completion of the initial assessment. Each test will take no more than 15 minutes to complete.

Thank you for your consideration to participate in the reliability testing of this tool. Please let me know if you are willing to participate in reliability testing of this tool or if you have any additional questions.

For questions or additional comments please contact Hana Hinkle, MPH at z111676@students.niu.edu, hhinkle1@uic.edu
Faculty Adviser: Dr. Derryl Block (dblock@niu.edu)
Include IRB contact

This project has been approved by the Northern Illinois University Institutional Review Board and the University of Illinois College of Medicine Rockford.
APPENDIX E

FINAL PRE ASSESSMENT TOOL
This survey has been developed and adapted with permission from the Clinical Cultural Competency Questionnaire (CCCQ) developed by Robert C. Like, MD, MS, Professor and Director of the Center for Healthy Families and Cultural Diversity, Department of Family Medicine and Community Health, Rutgers Robert Wood Johnson Medical School. The CCCQ was used in a project entitled, "Assessing the Impact of Cultural Competency Training Using Participatory Quality Improvement Methods," funded by the Aetna Foundation.

If you agree to participate in this study, please complete the pre-assessment, all training modules and the post assessment. You may stop participating in this study at any time.

1. Gender: _Male _Female _Prefer Not to Respond

2. Race:
   _American Indian/Alaskan Native
   _Asian
   _Black/African American
   _Native Hawaiian/Other Pacific Islander
   _White
   _More than One Race: Please Check All that Apply
   _Prefer Not to Respond

3. Ethnicity (Please Select One):
   _Hispanic, Latino or Spanish origin
   _Non-Hispanic, Latino or Spanish origin
   _Prefer Not to Respond

4. Highest Level of Education (Please Select One):
   _High School
   _Associate's Degree (AA, ADN Etc)
   _Bachelor's Degree
   _Master's Degree (MSN, MPH, MS, Etc)
   _Doctorate (MD, DNP, PhD, DrPH, Etc)
   _Other (Please Describe):

5. Current Position Type (Please Select One):
   _Administrator
   _Health Educator
   _Community or Public Health Nurse
   _Other: Please Describe

6. Do you provide clinical care as part of your position?
   _yes
   _no
   _unsure
7. Please select the name of your workplace: (Drop down menu of all Local Health Departments in Illinois)

8. Zip code of workplace: Open field text box

9. Number of years of experience in Public Health: Open field text box

10. Unconscious bias might affect some of my clinical/non-clinical decisions or behaviors. (Please Select One):
    - agree
    - disagree
    - unsure

11. I know how to provide culturally sensitive clinical or public health preventive services to diverse populations. (Please Select One):
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree

12. I intend to change how I interact and/or practice culturally appropriate care delivery with racially diverse patients/clients in the future. (Please Select One):
    - agree
    - disagree
    - unsure

13. I know about social and cultural characteristics of diverse racial and ethnic groups. (Please Select One):
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree

14. I know about disparities in care based on race and ethnicity (Please Select One):
    - Strongly Disagree
    - Disagree
    - Agree
    - Strongly Agree
15. I know about the historical and contemporary impact of racism, bias, prejudice and discrimination in health care experienced by various population groups in the United States (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

16. I am aware of racial, ethnic, or cultural stereotypes that impact patients/clients? (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

17. I am comfortable caring for patients/clients from culturally diverse backgrounds (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

18. I am comfortable advising a patient/client to change behaviors or practices related to cultural beliefs that impair one’s health. (Please Select one)
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

19. I am able to control my personal bias in relating to people that are from different background (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
20. If I acted prejudiced toward racial minority populations I would be concerned that others would be angry with me.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

21. I attempt to act in non-prejudiced ways toward racial minority populations because it is personally important to me.
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
APPENDIX F

FINAL POST ASSESSMENT TOOL
This survey has been developed and adapted with permission from the Clinical Cultural Competency Questionnaire (CCCQ) developed by Robert C. Like, MD, MS, Professor and Director of the Center for Healthy Families and Cultural Diversity, Department of Family Medicine and Community Health, Rutgers Robert Wood Johnson Medical School. The CCCQ was used in a project entitled, "Assessing the Impact of Cultural Competency Training Using Participatory Quality Improvement Methods," funded by the Aetna Foundation.

If you agree to participate in this study, please complete the pre-assessment, all training modules and the post assessment. You may stop participating in this study at any time.

1. Gender: _Male_ Female _Prefer Not to Respond

2. Race:
   _American Indian/Alaskan Native
   _Asian
   _Black/African American
   _Native Hawaiian/Other Pacific Islander
   _White
   _More than One Race: Please Check All that Apply
   _Prefer Not to Respond

3. Ethnicity (Please Select One):
   _Hispanic, Latino or Spanish origin
   _Non-Hispanic, Latino or Spanish origin
   _Prefer Not to Respond

4. Highest Level of Education (Please Select One):
   _High School
   _Associate’s Degree (AA, ADN Etc)
   _Bachelor’s Degree
   _Master’s Degree (MSN, MPH, MS, Etc)
   _Doctorate (MD, DNP, PhD, DrPH, Etc)
   _Other (Please Describe):

5. Current Position Type (Please Select One):
   _Administrator
   _Health Educator
   _Community or Public Health Nurse
   _Other: Please Describe

6. Do you provide clinical care as part of your position?
   _yes
   _no
   _unsure
7. Please select the name of your workplace: (Drop down menu of all Local Health Departments in Illinois)

8. Zip code of workplace: Open field text box

9. Number of years of experience in Public Health: Open field text box

10. Unconscious bias might affect some of my clinical/non-clinical decisions or behaviors. (Please Select One):
    _agree
    _disagree
    _unsure

12. I know how to provide culturally sensitive clinical or public health preventive services to diverse populations. (Please Select One):
    __Strongly Disagree
    _Disagree
    _Agree
    __Strongly Agree

11. I intend to change how I interact and/or practice culturally appropriate care delivery with racially diverse patients/clients in the future. (Please Select One):
    _agree
    _disagree
    _unsure

13. I know about social and cultural characteristics of diverse racial and ethnic groups. (Please Select One):
    __Strongly Disagree
    _Disagree
    _Agree
    __Strongly Agree

14. I know about disparities in care based on race and ethnicity (Please Select One):
    __Strongly Disagree
    _Disagree
    _Agree
    __Strongly Agree
15. I know about the historical and contemporary impact of racism, bias, prejudice and discrimination in health care experienced by various population groups in the United States (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

16. I am aware of racial, ethnic, or cultural stereotypes that impact patients/clients? (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

17. I am comfortable caring for patients/clients from culturally diverse backgrounds (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

18. I am comfortable advising a patient/client to change behaviors or practices related to cultural beliefs that impair one’s health. (Please Select one)
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree

19. I am able to control my personal bias in relating to people that are from different background (Please Select One):
   - Strongly Disagree
   - Disagree
   - Agree
   - Strongly Agree
20. If I acted prejudiced toward racial minority populations I would be concerned that others would be angry with me.

  
  Strongly Disagree
  Disagree
  Agree
  Strongly Agree

21. I attempt to act in non-prejudiced ways toward racial minority populations because it is personally important to me.

  
  Strongly Disagree
  Disagree
  Agree
  Strongly Agree

Please list your feedback on of the training including the IAT, training content, method of training delivery, etc.

Thank you for your participation in this research for additional information on the IAT or your results please access Project Implicit at https://implicit.harvard.edu/
APPENDIX G

INTERVENTION RECRUITMENT FLIER FOR ADMINISTRATORS
For questions or additional comments please contact Hana Hinkle, MPH at z111676@students.niu.edu or 815-871-4692.
Faculty Adviser: Dr. Derryl Block (dblock@niu.edu)
Include IRB contact
NIU IRB Contact:
Jeanette Gommel
Phone: 815-753-8588
Fax: 815-753-1631
Email: jgommel@niu.edu
This project has been approved by the Northern Illinois University Institutional Review Board protocol number (HS18-0072).
My name is Hana Hinkle and I am currently a PhD candidate in Health Sciences at Northern Illinois University. The purpose of this research is to pilot and evaluate a cultural competency training program for public health workers.

You have been identified as an administrator for a local health department in Illinois. I am interested in implementing this research to your staff as a training opportunity.

The research study will include a pre-assessment, intervention and post-assessment. The intervention will include training on factors that influence culturally appropriate care delivery including structural racism and addressing health disparities. The training program should take no more than two total hours to complete and is available online and can be self-paced. Participants will have 30 days after the completion of the pre-assessment to finish the training program. A benefit in participating in the training program include the opportunity to participate in a free training that educates staff on culturally appropriate care delivery. This training can increase knowledge and engagement of participants to practice culturally appropriate care delivery for diverse clients in a health department setting. Participants that complete the training program will be provided a certificate of completion through the Illinois Area Health Education Center Network Program

If you are interested in learning more on how your department can be included in this research please feel free to contact me. Each employee at your site will have the option to participate in this research.

Results from the training program may help enhance current cultural competency training practices for public health professionals.

For questions or additional comments please contact Hana Hinkle, MPH at z111676@students.niu.edu or 815-871-4692.
Faculty Adviser: Dr. Derryl Block (dblock@niu.edu)
Include IRB contact

This project has been approved by the Northern Illinois University Institutional Review Board.

Thank you for your time.
APPENDIX I

STEP-BY-STEP INSTRUCTIONS
Welcome to the Public Health CARES Online Cultural Competency Training.

To begin this training please access the training course here: https://illinois-ahec-trainings.teachable.com/p/an-enhanced-cultural-competency-training-model-for-the-public-health-workforce

Step 1: Select Enroll An Enhanced Cultural Competency Training Model for the Public Health Workforce in this course for free. You will need to create a Teachable account to log in (make sure you click the box to agree to the terms of use). After you have created a Teachable account, you can continue to the course. *if you do not see a “continue to the course” option after creating an account, please go to the email address you used to set up your teachable account and confirm your email address via an email sent by Teachable you will then see a link in this email to continue to participate in the training*

Step 2 Introduction Section: Please select the Introduction Section first. You may listen to the audio clip by selecting the play button under the audio section (If you do not see a play button or link to an audio clip, PLEASE CLICK YOUR BROWSER'S REFRESH BUTTON). Then review and respond (yes or no) to the statement of informed consent.

Important! Select COMPLETE AND CONTINUE to advance to the NEXT LECTURE.

Step 4 Pre-Assessment: First, you may listen to the audio clip by selecting the play button on the audio clip. Then, complete the Pre-Assessment by following the link included in this section. This link will take you to a separate website called Qualtrics. Complete the Pre-Assessment. If your browser did not open a new window for the Pre-Assessment, please hit the back button in your browser to go back to the training after you complete the Pre-Assessment.

Important! Select COMPLETE AND CONTINUE to advance to the NEXT LECTURE.

Step 5 Personal Stories-Worlds Apart Module: First, you may listen to the audio clip by selecting the play button on the audio clip (If you do not see a play button or link to an audio clip, PLEASE CLICK YOUR BROWSER'S REFRESH BUTTON).

The audio and text introduces the story that will be featured in the video clip in this module. After you have listened to the audio clip and read the text associated with the audio clip, you may watch the clip of Alicia Mercado’s story. If your browser did not open a new window for the video clip please hit the back button in your browser to go back to the training. Then, please access the second audio clip and consider the questions and comments provided in the audio clip.
Important! Select COMPLETE AND CONTINUE to advance to the NEXT LECTURE.

**Step 6 Health Disparities:** First, you may listen to the audio clip by selecting the play button on the audio clip *(if you do not see a play button or link to an audio clip, PLEASE CLICK YOUR BROWSER’S REFRESH BUTTON).* Then you can review the slides and content included in the training module under Health Disparities.

Important! Select COMPLETE AND CONTINUE to advance to the NEXT LECTURE.

**Step 7 Structural Racism:** First, you may listen to the audio clip by selecting the play button on the audio clip *(if you do not see a play button or link to an audio clip, PLEASE CLICK YOUR BROWSER’S REFRESH BUTTON).* Then you can access the video clip and/or review the handouts in this section. You do not need to watch the entire video clip—it is included as a helpful resource to follow along with the handouts. **Please review the handouts.**

Important! Select COMPLETE AND CONTINUE to advance to the NEXT LECTURE.

**Step 8 Implicit Association Test:** First, you may listen to the audio clip by selecting the play button on the audio clip *(if you do not see a play button or link to an audio clip, PLEASE CLICK YOUR BROWSER’S REFRESH BUTTON).* Then you can review the text information on the Implicit Association Test, also included here:

> The Implicit Association Test (IAT) can be used to identify any potential unconscious preferences for certain race categories. It is important to note that the IAT on RACE can only identify individual preferences for race categories and does NOT demonstrate if an individual is racist. The IAT can be a great tool to make you aware of any potential unconscious bias you may have in interacting with patients/clients.

Next, please complete the IAT following this link: [https://implicit.harvard.edu/implicit/takeatest.html](https://implicit.harvard.edu/implicit/takeatest.html)

Read the information presented and select "I wish to proceed". Then select the IAT for RACE.

**IMPORTANT:** Please select DECLINE TO ANSWER all questions prompted before the screen for the actual IAT test. These questions are not a part of our training program. It is important to follow the directions provided on the IAT starting with selecting E/I button on your keyboard when prompted. When you
have completed the IAT select DECLINE TO ANSWER before accessing your result. After you have declined to answer all demographic questions you can select submit and you will be given your result to the IAT. *Note: WILL NOT BE ASKED TO RECORD YOUR RESULTS OF THE IAT.*

Please use the back button in your browser to return back to the Teachable training and website. This should take no more than 15 minutes to complete.

**Important!** Select COMPLETE AND CONTINUE to advance to the NEXT LECTURE.

**Step 9 Post-Assessment:** Please complete the Post-Assessment by accessing the link included in this section. This link will take you to a separate website called Qualtrics. *If your browser did not open a new window for the post-assessment please select the back button in your browser to go back to the training.*

**Step 10:** Congratulations! You have now completed all sections of the Public Health CARES Enhanced Cultural Competency Training. To receive your certificate of completion, please follow this link [https://www.webmerge.me/merge/158236/ez7pq2](https://www.webmerge.me/merge/158236/ez7pq2) and fill out the form with your name and email address. You will receive an email from Webmerge with your personalized certificate.
APPENDIX J

IRB APPROVAL DOCUMENTS
19-Mar-2018

TO: Hana Hinkle
   College of Health and Human Sciences

RE: Protocol # HS18-0072 “An enhanced cultural competency training model for the Public Health workforce: Public Health CARES”

Your Initial Review submission was reviewed and approved under Expedited procedures by Institutional Review Board #1 on 19-Mar-2018. Please note the following information about your approved research protocol:


If your project will continue beyond that date, or if you intend to make modifications to the study, you will need additional approval and should contact the Office of Research Compliance and Integrity for assistance. Continuing review of the project, conducted at least annually, will be necessary until you no longer retain any identifiers that could link the subjects to the data collected. Please remember to use your protocol number (HS18-0072) on any documents or correspondence with the IRB concerning your research protocol.

Please note that the IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Unless you have been approved for a waiver of the written signature of informed consent, this notice includes a date-stamped copy of the approved consent form for your use. NIU policy requires that informed consent documents given to subjects participating in non-exempt research bear the approval stamp of the NIU IRB. This stamped document is the only consent form that may be photocopied for distribution to study participants.

It is important for you to note that as a research investigator involved with human subjects, you are responsible for ensuring that this project has current IRB approval at all times, and for retaining the signed consent forms obtained from your subjects for a minimum of three years after the study is concluded. If consent for the study is being given by proxy (guardian, etc.), it is your responsibility to document the authority of that person to consent for the subject. Also, the committee recommends that you include an acknowledgment by the subject, or the subject's representative, that he or she has received a copy of the consent form. In addition, you are required to promptly report to the IRB any injuries or other unanticipated problems or risks to subjects and others. The IRB extends best wishes for success in your research endeavors.
25-Apr-2018
Hana Hinkle
College of Health and Human Sciences

RE: Protocol # HS18-0072 “An enhanced cultural competency training model for the Public Health workforce: Public Health CARES”

Dear Hana Hinkle,

Your Protocol Amendment submission was reviewed and approved under Expedited procedures by Institutional Review Board #1 on 25 April 2018.

Please note the following information about your approved research protocol:

If your project will continue beyond that date, or if you intend to make modifications to the study, you will need additional approval and should contact the Office of Research Compliance and Integrity for assistance. Annual review of the project will be necessary until you no longer retain any identifiers that could link the subjects to the data collected.

It is important for you to note that as a research investigator involved with human subjects, you are responsible for ensuring that the project has current IRB approval at all times, and for retaining any signed consent forms obtained from your subjects in a secure place for a minimum of three years after the study is concluded. The committee also recommends that the informed consent include an acknowledgement that the subject, or the subject’s representative, that he or she has received a copy of the consent form. In addition, you are required to promptly report to the IRB any injuries or other unanticipated problems involving risks to subjects or others.

Please remember to use your protocol number (HS18-0072) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the Office of Research Compliance and Integrity at (815) 753-8588.