

WORKFORCE DEVELOPMENT AND HEALTH EDUCATION COMPETENCIES:
ARE WE PREPARING THE FUTURE PUBLIC HEALTH WORKFORCE
FOR SUCCESS IN THE FIELD?

A DISSERTATION
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COLLEGE OF HEALTH SCIENCES

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DENTON, TEXAS

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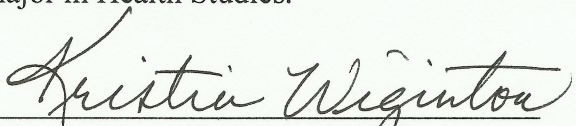
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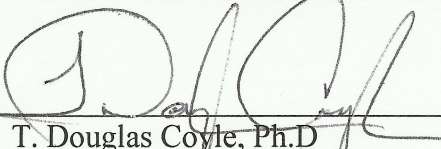
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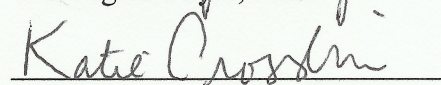
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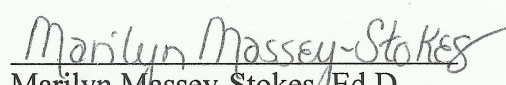
I am submitting herewith a dissertation written by Deidre J. Holland entitled "Workforce Development and Health Education Competencies: Are We Preparing the Future Public Health Workforce for Success in the Field?" I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Health Studies.

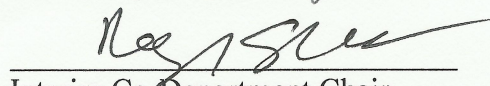

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DEDICATION

For all of those who supported me in achieving this monumental goal, thank you for your ever-lasting encouragement, understanding, patience, and love.

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ABSTRACT

DEIDRE J. HOLLAND

WORKFORCE DEVELOPMENT AND HEALTH EDUCATION COMPETENCIES: ARE WE PREPARING THE FUTURE PUBLIC HEALTH WORKFORCE FOR SUCCESS IN THE FIELD?

MAY 2015

The purpose of this research study was to measure the competency levels of currently employed, academically trained health educators by identifying which competencies are being met and/or not met by professional public health educators by surveying employing supervisors of U.S. Local Health Departments/Local Health Agencies.

Results from this study will contribute to the assessment of the public health workforce knowledge base by identifying the gaps in KSAs of academically trained health educators, which should prove to contribute to the professional preparation, certification, and continuing education needs of health educators. The findings from this current study have important implications for the field of the health education profession, particularly with regards to curriculum development and the competencies they are guided by and constructed around.

Pearson's chi-squared were conducted to explore the differences between competency levels of academically trained health educators and other public health personnel performing health education. Results included: the ability to determine the

range of health education needed to achieve goals and objectives: $X^2(1) = 5.86$, $p \leq .016$, Fisher's *exact test* = .028; the skill to link people to needed personal health services and assure the provision of health care when otherwise unavailable: $X^2(1) = 6.49$, $p \leq .011$, Fisher's *exact test* = .019; and the ability to use strategies to ensure cultural competence in implementing health education plans: $X^2(1) = 5.30$, $p \leq .021$, Fisher's *exact test* = .030.

Pearson's chi-squared were conducted to explore for differences between KSA training needs of academically trained health educators and other public health personnel performing health education and related activities. Results included: KSAs needed to employ technology to communicate to priority populations: $X^2(3) = 9.3126$, $p \leq .025$, Fisher's *exact test* = .024; the necessary KSAs to identify potential partner(s): $X^2(3) = 9.77$, $p \leq .021$, Fisher's *exact test* = .022; and KSAs to be more adept at interpreting results of evaluation and research: $X^2(3) = 8.33$, $p \leq .040$, Fisher's *exact test* = .039.

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CHAPTER I
INTRODUCTION

Rationale

The public health workforce is charged with a multitude of challenges as a core piece of the public health infrastructure and as such, the public health system is dependent on a competently trained public health workforce (Cioffi, Lichtveld, & Tilson, 2004; Gebbie, Merrill, & Tilson, 2002; Woodhouse et al., 2010). As the landscape of the US public health system is undergoing substantive challenges and changes, the significance of identifying and validating the competencies held by those graduating from health education training programs becomes even more impactful than in the past several decades.

The challenges brought about by evolving public health issues such as ebola, avian influenza (H1N1), and all hazards planning/preparedness serve to underscore the need to ensure public health education programs are producing a public health workforce that can apply evidence-based practice through the socio-ecological lens to the communities they serve (Brownson, Baker, Leet, & Gillespie, 2003; Cioffi et al., 2004; Gebbie et al., 2002; Institute of Medicine [IOM], 2003; Woodhouse et al., 2010). Tilson and Gebbie classified someone as a professional member of the public health workforce if “a significant portion [of] work content advances or contributes to accomplishing one or more of the ten essential public health services” (2004, p. 343).

Public health practitioners carry out these services in a variety of ways and settings through evidence-based practice. While there are discrepancies in the research about what evidence-based practice consists of, there are several published, evidence-based works on the delivery of the 10 Essential Public Health Services (EPHS) (Brownson et al., 2003; Mays, Halverson, & Scutchfield, 2004; Potter, Barron, & Cioffi, 2003). In the last few years, there has been an abundance of articles and calls-to-action regarding the training competencies of the public health workforce and their abilities to effectively perform these services (Amodeo, 2003; Association of State and Territorial Health Officers [ASTHO], 2004; Cioffi et al., 2004; IOM, 2003; Lichtveld et al., 2009; Mays, McHugh, Shim, Perry, & Halverson, 2004; The National Commission for Health Education Credentialing, Inc. [NCHEC], 2008a).

In the last 75 years, the profession of health education has developed and evolved through delineating the work of the profession, creating standards that address the educational competencies of practitioners and guide curriculum development, as well as advancing the acquisition of a common set of practice-related skills. Program accreditation and individual certification together ensure the development of health education skills and knowledge related to evidence-based practice. A competency has been defined as “the ability to apply a certain specified skill” in a “defined subject area” needed to effectively practice in a profession (NCHEC, 2010, p. 3).

Competencies are an essential component of outcome-based education for many health professions; they are crucial for public transparency and accountability because they provide definable benchmarks for assessing practitioner knowledge and skills, and

articulating academic program outcomes (Airhihenbuwa et al., 2005; Amodeo, 2003; ASTHO, 2004; Cioffi et al., 2004; Lichtveld et al., 2009; NCHEC, 2010; Woodhouse et al., 2010). Competencies also play a role in credentialing, which includes accreditation of institutions and licensure or certification/registration of individuals. Additionally, they aid in developing and defining job descriptions for employing agencies, organizations, and other stakeholders (Council on Education for Public Health [CEPH], 2005; NCHEC, 2008a; NCHEC, 2008b; NCHEC, 2008c; NCHEC, 2010; Public Health Foundation's Council on Linkages between Academia and Public Health Practice [PHFCOL], 2010).

Statement of the Purpose

The purpose of this research study was to measure the competency levels of currently employed, academically trained health educators by surveying employing supervisors or administrators of local health departments/local health agencies (LHD/LHAs) to determine which competencies (knowledge, skills, and attitudes/attributes [KSAs]) are being met and not being met by professional public health educators. As this type of research study has rarely been carried out with employing agencies, and never with those who supervise health educators, the need to identify the gaps in the knowledge base should prove to contribute to the professional preparation, certification, and continuing education needs of health educators. The need for clearly articulated competencies that are recognized both within and outside of the public health arena challenges the public health profession due to shrinking resources and increasing demands for public accountability. It is imperative for educational institutions,

accrediting agencies, and employers to articulate what competencies are needed in the underfunded, shrinking public health workforce today.

The 10 EPHS and the professional responsibilities and competencies of health educators align in many aspects. The National Commission for Health Education Credentialing, Inc. (2008a) stated that the seven core responsibilities and competencies of health education specialists are: 1) assess needs, assets and capacity for health education; 2) plan health education; 3) implement health education; 4) conduct evaluation and research related to health education; 5) administer and manage health education; 6) serve as a health education resource person; and 7) communicate and advocate for health and health education (Airhihenbuwa et al., 2005; CEPH, 2005; NCHEC, 2008b; NCHEC, 2008c; NCHEC, 2010; PHFCOL, 2009).

In fact, the only EPHS that is not encompassed by any constructs of the NCHEC competencies is EPHS #6: *Enforce laws and regulations that protect health and ensure safety*. As for the other nine EPHSs, three directly match the NCHEC competencies: inform and educate, evaluate, and research (Centers for Disease Control and Prevention [CDC], 2010; Johnson & Becker, 2011; NCHEC, 2008c), while the remaining six EPHS match, in part, and fall within the capacity of the seven areas of responsibilities and competencies of health educators (NCHEC, 2008c). The other six EPHS include: monitor health status to identify community health problems; diagnose and investigate health problems and health hazards in the community; mobilize community partnerships to identify and solve health problems; develop policies and plans that support individual and community health efforts; link people to needed personal health services and assure the

provision of health care when otherwise unavailable; assure a competent public health and personal health care workforce; and research for new insights and innovative solutions to health problems (CDC, 2010; Johnson & Becker, 2011; NCHEC, 2008c).

Public health educators play a vital role in the public health realm through a variety of contributions including, but not limited to, prevention and intervention. A health educator is defined as one who promotes, maintains, and improves individual and community health by assisting individuals and communities to adopt healthy behaviors. Additionally, they collect and analyze data to identify community needs prior to planning, implementing, monitoring, and evaluating programs designed to encourage healthy lifestyles, policies, and environments (Bureau of Labor Statistics, 2010; NCHEC, 2008a).

Theoretical Foundation

Competencies are a combination of knowledge, skills, and attitudes/attributes (KSAs) that enable public health practitioners to perform their work effectively and efficiently, and are the building blocks of competency statements (Amodeo, 2003; ASTHO, 2004; Coffi et al., 2004; IOM, 2003; Lichtveld, 2001; Mays, Halverson et al., 2004). Critical to the understanding of competencies are the notions that competencies are related to specific roles or responsibilities, are measured against established standards, and that acquisition of competencies can be impacted by education and training (US Department of Health and Human Services, 2003).

To ensure that the competency-based instructional activities are at the right level of complexity to advance learners' careers, it is helpful to add a dimension to guide curriculum development. Based on the earlier work of Dreyfus and Dreyfus (1980), which focused on the acquisition and progression of skills and placed emphasis on a range of proficiencies and mastery, the model of skill development adds this important component (Dreyfus & Dreyfus, 1980).

The Dreyfus model of skills acquisition, along with the competency levels of certified health educators, helps to better define stages of learning and provides a roadmap for advancing from one stage to the next (Benner, 2004; Dreyfus & Dreyfus, 1980; NCHEC, 2008c). The importance of this model, coupled with competency-based curricula in health education and measurement of performance through the lens of the EPHS, provides the underlying logic for designing and conducting this research study. By measuring the KSAs of health educators employed in the public health workforce, the effectiveness of these competencies should be underscored both for making the goals of educational activities explicit as well as serving as a quality-assurance utility.

Research Questions

This study addressed the following research questions:

1. What competency levels in core public health competencies do academically trained health education professionals possess?
2. What KSAs in core public health competencies are missing in academically trained health education professionals?

3. What percentage of the public health workforce at a LHD/LHA is performing the work of health educators but without formal training?
4. How do public health administrators/supervisors view the importance/value of health education and related activities for LHD/LHAs?

Hypotheses

The following null hypotheses were tested at the $p < .05$ level of significance:

H₁: There are no statistically significant differences in the levels of competencies between academically trained health educators and other public health personnel performing health education.

H₂: There are no statistically significant differences in KSAs between academically trained health educators and other public health personnel performing health education.

Delimitations

The delimitations for this study are as follows:

1. Given that a majority of LHD/LHAs provide a wide array of health services and employ health educators, the sampling pool will be drawn from the database of over 2,500 LHD/LHAs listed in the 2010 NACCHO directory;
2. The sample population will be limited to employed adults over the age of 18;
3. The sample will be stratified by size of jurisdiction served to ensure adequate samples of each size of jurisdictions are represented; and

4. Only the proficiencies of health educators and those performing health education activities will be assessed.

Limitations

The limitations for this study are as follows:

1. Selection of employers will not be random, but will be a purposive, stratified sample of all LHD/LHAs within the U.S.; therefore, caution should be considered in generalizing the results;
2. As this is a self-report instrument, it may be limited by recall bias, response bias, socially desirable responding, acquiescent responding, and extreme responding; and
3. There may be differences in how respondents interpret questions due to ambiguity of the questions or lack of respondents understanding.

Assumptions

The assumptions for this study are as follows:

1. Respondents will answer the survey honestly and to the best of their ability;
2. Respondents will be able to read and understand English;
3. Respondents employ at least one person responsible for health education; and
4. Each respondent will be the appropriate person to answer questions about the responsibilities of a health educator in their respective workplace.

Definition of Terms

Accreditation: A means of self-regulation and peer review adopted by the educational community. The accrediting process is intended to strengthen and sustain the quality and integrity of higher education, making it worthy of public confidence (Allegrante et al., 2004; CEPH, 2005; NCHEC, 2008a).

Competencies: Statements that link skill performance with specific content, used in developing curricula and job descriptions (Woodhouse et al., 2010, p. E22).

Dreyfus model of skills acquisition: Multitier model of the stages involved in the acquisition and development of a skill (Benner, 2004; Dreyfus & Dreyfus, 1980).

Health educator: One who promotes, maintains, and improves individual and community health by assisting individuals and communities to adopt healthy behaviors. They collect and analyze data to identify community needs prior to planning, implementing, monitoring, and evaluating programs designed to encourage healthy lifestyles, policies, and environments. They may also serve as a resource to assist individuals, other professionals, or the community, and may administer fiscal resources for health education programs (Bureau of Labor Statistics, 2010; NCHEC, 2008a).

LHD/LHA: Local health department/local health agency- responsible for creating and maintaining conditions that keep communities healthy and responsible for delivering and providing the 10 essentials public health services (NACCHO, 2011).

Professional competencies: The complex combination of public health and other relevant disciplinary skills expected of a public health practitioner (Demers, & Mamary, 2008).

Public health professional: A person educated in public health or a related discipline who is employed to improve health through a population focus (PHFCOL, 2009).

Public health workforce: Individuals responsible for providing essential public health services regardless of the organization in which they work and who are competent to perform public health functions and assure the delivery of the 10 essential public health services (Gebbie, Merrill, & Tilson, 2002).

10 Essential Public Health Services: Represents the core of public health practice and provide a working definition of public health. A guiding framework for the responsibilities of local public health systems (CDC, 2010).

Workforce development: Current demand for public health services and the supply of trained professionals required to meet that demand (Cioffi et al., 2004).

Importance of Study

The results of this study should help to identify the relationship between core public health competencies and health education competencies and how they align with the essential public health services performed in the workforce. Competencies are utilized as the measurement of academic and practice proficiencies; therefore, it is important to assess if health educators possess the requisite KSAs to fill the specific role in the public health workforce. Development of competencies and the curricula that is built around them should be rigorous and out-come based.

As this type of research study has rarely been carried out with employing agencies and never with those who supervise health educators, the need to identify the gaps in the knowledge base should prove to contribute to the professional preparation, certification, and continuing education needs of health educators. Public health educators play a vital role in the public health realm through a variety of contributions, including but not limited to, prevention and intervention.

The research study contributes to the public health workforce knowledge base by identifying the gaps in KSAs of academically trained health educators, which contributes to the professional preparation, certification, and continuing education needs of health educators. In addition, this study provides empirical evidence that competency-based academic health education programs ensure that the professional, academically trained, health education workforce is not only competent, but also has the mastery of the necessary KSAs to perform the essential public health services.

CHAPTER II

REVIEW OF LITERATURE

Undergraduate and graduate programs in health education throughout the United States are designed to prepare future health educators to enter the workforce as competent and trained professionals with skill sets and attributes that are generally defined by linked competencies and roles. Most programs in health education are directly tied to and linked with the responsibilities and competencies of health educators as defined by the National Commission for Health Education Credentialing, Inc. (NCHEC), which is the credentialing organization for health educators in the United States (2008a). NCHEC conducted the first role delineation study in the 1970s. The results showed there were “commonalities among all entry-level health educators regardless of setting” (NCHEC, 2008a, para. 6). As a result, that process eventually led to the verified competencies for health education practice (NCHEC, 2008a).

Health Education Credentialing

The purpose of the Association of Schools of Public Health (ASPH) competencies, which emerged in two phases (resulting in multiple core discipline and cross-cutting competencies), is to provide guidance in the development of curricula and to serve as resource guides for those interested in improving the quality of public health education and training (Woodhouse, Auld, Livingood, & Mulligan, 2006; Woodhouse et al., 2010). This complements the Council on Education for Public Health (CEPH)

accreditation criteria, amended in 2005, requiring competencies for all areas of specialization, including core disciplines and concentrations. The ASPH competencies also serve as the basis for a new certification process and examination in public health developed by the National Board of Public Health Examiners (ASPH, 2008; Woodhouse et al., 2010).

To assess whether programs were using competencies as a basis for their curriculum, a survey was distributed by the PHFCOL in 2006 on the usage of the core competencies to academic institutions in an effort to indicate how much progress has been made towards Healthy People 2010 Objective 23-9: *Increase the proportion of Council on Education for Public Health (CEPH) accredited schools of public health, CEPH accredited academic programs, and schools of nursing, with a public health or community health component, that integrate core competencies in the Essential Public Health Services into curricula*. The results showed that over 90% of programs indicated that the competencies had been included in their curricula (PHFCOL, 2006).

Therefore, if programs are enveloping the competencies into their respective curricula, then how is the effectiveness as a public health practitioner being measured and to what extend is the public health workforce prepared to undertake work in the field? Crawford et al. (2009) conducted a major literature review and environmental scan to assess key topics related to workforce development research. They discovered that the measurement of the public health workforce from retention and training to education and credentialing showed there are no standardized measures in place, and the system for measuring the workforce is fragmented at best.

Criteria for the Accreditation of Health Education Programs

Over the course of the last 25 years, questions and considerations have repeatedly arisen as to the criteria for meeting the educational, societal, and community needs of health education students. In addition to instilling in them the value of life-long learning, and tying these ideologies and constructs to standardized measures of one accrediting body or another. The accreditation process is a major factor of consideration when designing and planning competency-based health education curricula, whether it is at course or program level and there are different accrediting organizations for health education (CEPH, 2005; NCHEC, 2008a).

The aforementioned process became the basis for the health educator credentialing process. In 1985, *A Framework for the Development of Competency-Based Curricula for Entry-Level Health Educators* was published. The document provided a frame of reference for developing health education curricula (NCHEC, 2008a). These competencies in health education define the roles that the health education specialist will fill in the workforce and what framework of skills they should have as health educators (Cottrell et al., 2009; NCHEC, 2008c). There are currently over 61,000 health education professionals in the US who have three individual forms of credentialing available to them, which are CHES, Certified in Public Health (CPH), and teacher certification and licensure (Cottrell et al., 2009).

Health Education Competencies

The Association of Schools of Public Health (ASPH) competency development process defined *competencies* as “a unique set of applied knowledge, skills, and other attributes, grounded in theory and evidence, for the broad practice of public health” (Woodhouse et al., 2010, p. E22). Additionally, CEPH, an independent, nongovernmental agency, recognized by the US Department of Education to accredit schools of public health and public health programs, has defining criteria about what specific competencies are needed to prepare students for entry into the public health workforce (2005). SOPHE and AAHE have a joint committee called the SOPHE/AAHE Baccalaureate Program Approval Committee (SABPAC) that reviews, approves, and credentials undergraduate health education professional preparation programs; however, it is a voluntary credentialing process (National Implementation Task Force for Accreditation in Health Education, 2010).

In 1998, a joint committee of the AAHE, CEPH, NCHEC, ASPH, SABPAC, and the National Committee on Accreditation of Teacher Education (NCATE), was formed to help professional preparation programs implement health education competencies through identification of the number, roles, and varied characteristics of the professionally prepared health educator in the workforce (Auld, Gielen, & McDonald, 1998; Taub, Birch, Auld, Lysoby, & Rasar King, 2009). The 18-member expert panel of academicians and health education practitioners were tasked with the following: (a) profiling professional preparation programs, (b) verifying the number of students and faculty, (c) validating curricula content, (d) authenticating how well programs are

preparing their students with regards to competencies, (e) identifying future needs in relation to knowledge and skills, and (f) categorizing where health educators were being employed in the workforce (Auld et al., 1998; Demers & Mamary, 2008; Taub et al., 2009). In 2001, this entity of professionals became known as the National Task Force on Accreditation in Health Education (Allegrante et al., 2004)

Later that same year, the profession began the enormous undertaking of a six-year, intensive study to substantiate the responsibilities, competencies, and sub-competencies of the entry-level health educator, as well as confirm the competencies and sub-competencies of the advanced-level health educator (Airhihenbuwa, et al., 2005). The results of this notable study, known as the National Health Educator Competencies Update Project (CUP), described some of the similarities between the current and past decades regarding responsibilities. The study also revealed some significant, more current differences that have evolved in the health education profession over time (Airhihenbuwa et al., 2005). Two explicit findings indicated that there is a three-level hierarchy of practice skills, with each subsequent level encompassing the previous, regardless of varied work settings. Additionally, doctoral level competencies and sub-competencies were identified for the first time (Airhihenbuwa et al., 2005).

In 2008, the National Implementation Task Force on Accreditation in Health Education issued a consensus statement that suggested new designations of practice levels in order to clearly outline the competencies of health educators, with corresponding changes in designations at certification:

Students who complete an accredited undergraduate program would earn the designation of Health Education Specialist (CHES) and would then be certified as CHES, whereas masters and doctoral students would be designated as a Master Health Education Specialist (MCHES) with certification as a Master's-level Certified Health Education Specialist (National Implementation Task Force on Accreditation in Health Education, 2008, para. 3).

The work of the task force substantiated the recognized need for standardization in professional preparation and for accredited programs (Goldstein, 2008; National Implementation Task Force on Accreditation in Health Education, 2008; Woodhouse et al., 2010).

In 2001, a national panel of leading health educators from public health agencies, academia, and professional organizations converged to examine the framework of competencies needed for public health educators to practice effectively in the field. One of the main questions asked of each of the five disciplines was, "What are the skills that currently employed personnel need that they do not have?" The competencies that were a result of that and other questions became the competencies implemented by CEPH (Allegrante et al., 2001).

The panel identified the following eight broad areas of competencies most needed by currently employed public health educators: (a) advocacy, (b) business management and finance, (c) communication, (d) community health planning & development, coalition building, and leadership, (e) computing and technology, (f) cultural competency, (g) evaluation, and (h) strategic planning. Additionally, seven areas of professional responsibility comprise core generic competencies that are required of entry-level certified health education specialists in any practice setting, including the community, medical settings, school, workplace, and college/university settings. (Allegrante et al., 2001; IOM, 2003).

Additional recommendations were made by the IOM (2003) suggesting that eight content areas be included in graduate-level public health education programs and schools of public health as a natural development of the traditional core public health sciences. These content areas evolved as a result of the ongoing societal evolution of technological, economical, and demographic changes: (a) informatics, (b) genomics, (c) communication, (d) cultural competence, (e) community-based participatory research, (f) global health, (g) policy and law, and (h) public health ethics (IOM, 2003).

Behavioral Health Competencies

Within the domain of behavioral health, there has been growing concern about the workforce crisis. Difficulties encompass the recruitment and retention of staff and the delivery of accessible and effective training in both pre-service training as well as continuing education settings. Concern about the crisis led to a multi-phased, cross-sector collaboration with input from a dozen expert panels (Hoge et al., 2009). The

ensuing results led to the creation of an action plan that outlined seven core strategic goals relevant to all sectors of the behavioral health field: (a) expand the role of consumers and their families in the workforce; (b) expand the role of communities in promoting behavioral health and wellness; (c) use systematic recruitment and retention strategies; (d) improve training and education; (e) foster leadership development; (f) enhance infrastructure to support workforce development; and (g) implement a national research and evaluation agenda. The action plan serves as a call to action and was used to guide workforce initiatives across the nation (Hoge et al., 2009).

In May 2004, the Annapolis Coalition on Behavioral Health Workforce Education convened a national meeting on the identification and assessment of behavioral health competencies. Leading consumer and family advocates, collaborated with other experts on competencies from diverse disciplines and specialties in the fields of both mental health care and substance use disorders to generate 10 consensus recommendations to guide the future development of workforce competencies in behavioral health (Hoge et al., 2005). Recommendations from this meeting included: (a) support initiatives to identify and assess competencies that are reliable and valid through the use of established methods of competency development; (b) link multiple groups and organizations that are developing behavioral health competencies; (c) foster funding priorities supportive of a health services research agenda that evaluates the link between competent performance and health care outcomes (Hoge et al., 2005). A collaborative effort to identify a set of core or common competencies was envisioned as a key strategy for advancing behavioral

health education, training, and other workforce development initiatives (Gebbie, Merrill, & Tilson, 2002; Hoge et al., 2005).

Assessment of Public Health Training and Updated Competencies

In 2010, the CUP model was revisited with a contemporary update project known as the National Health Educator Job Analysis 2010 (HEJA, 2010), and was undertaken by NCHEC, SOPHE, and AAHE, in order to analyze, validate, and report changes in professional health education preparation and practice (NCHEC, SOPHE, & AAHE, 2010). A few of the outcomes of the HEJA 2010 were updating health education practice competencies at both the entry and advanced levels of health educators as well as directing the development of the CHES and the MCHES examinations (Allegrante, Barry, Auld, & Lamarre, 2012; Cottrell et al., 2012; NCHEC, SOPHE, & AAHE, 2010).

Despite calls from multiple sources, including the IOM, a large proportion of public health professionals have limited formal training in public health science. The Council on Linkages between Academia and Public Health Practice developed the core competencies to provide a framework for assessing professionals' readiness to manage the complex challenges in public health. Researchers at the Arkansas Department of Health incorporated the core competencies into a workforce development program to improve workforce competence of professionals (Stewart et al., 2010). The program's curriculum was mapped to the core competencies in each of the linkages domains. Participants self-assessed their competence before and after the year-long program; and results from 2007 indicated that participants significantly increased their perceived competence in all of the Linkages domains, whereas in the 2008 program, participants

reported increases in all but cultural competency (Stewart et al., 2010). The greatest reported increase in perceived competency was in policy development.

Defining the Public Health Workforce

Public health workers are defined as all those responsible for providing the essential public health services regardless of the organization in which they work. Official public health agencies are the most common employers of the nearly 500,000 identifiable public health workers with 19% at the federal level, 33% at the state level, and 34% at the local level in 2000. The public health workforce definition encompasses many other positions which have not been counted. These include persons responsible for occupational safety and health in industry, unions, and government; those doing population-focused health education on behalf of voluntary organizations (e.g. heart disease, cancer, or diabetes) and large health care systems; and those reducing environmental hazards, employed by both governmental agencies and other enterprises (Gebbie, Merrill, & Tilson, 2002).

Public health workers may be defined on three major dimensions: specific profession (the worker), place of employment (the work setting), or focus of concern (the work). There has not been a national system of public health workforce studies for at least 20 years, yet other national policies have a large impact on the workforce. In 2004, Coffi, Lichtveld, and Tilson constructed a logic model on public health workforce development that clearly articulated the basic tenants (inputs, activities, and effects) of workforce development. Two of the main inputs of the model were the competency

requirements for the public health workforce (current and future) as well as education and/or training institutes.

Furthermore, a systematic approach was utilized for education/training which included relevant situational feedback on KSAs. The effects are measured through evaluations of changes in KSAs, self-efficacy, and direct observations (Cioffi et al., 2004). In addition to the logic model, Cioffi et al. (2004) conducted an extensive (1975-2002) literature review of public health workforce development. They concluded that there was limited evidence in the literature on the quantity and quality of the actual performance measurements of the public health workforce in relation to the 10 essential public health services (Cioffi et al., 2004). The tenants of that public health workforce development were modified for this study and used as a framework for this research.

Public Health Practitioners and Academia/Academicians

Similarly, Public Health Foundation's Council on Linkages (or the Council) between Academia and Public Health Practice, a coalition of representatives from 17 national public health organizations established in 1992, has worked together to foster collaboration between academia and practice in order to assure a "well-trained, competent workforce and a strong, evidence-based public health infrastructure" (PHFCOL, 2009, para. 2). One of the Council's main activities has been to develop and define core competencies for public health professionals through a requisite set of skills that reflect the characteristics needed in order to practice public health within organizations and agencies in order to effectively "protect and promote health in the community" (PHFCOL, 2009, para. 1).

These core competencies are designated as a point of reference for both academic programs and public health organizations to “understand, assess, and meet training and workforce needs” (PHFCOL, 2009, para. 2). Three tiers (levels) of responsibilities and duties were identified and characterized with tier 1 being the daily activities of a non-managerial level public health professional, tier two encompassing additional managerial or supervisory skills and tasks, and tier 3 being senior management, directors, and/or leaders (NCHEC, the Society for Public Health Education [SOPHE], American Association of Health Education [AAHE], 2010; PHFCOL, 2010).

Health education was the first population-based profession to develop competencies, which have been used in accreditation, certification, and other quality assurance systems for more than 20 years. Hill, Alpi, and Auerbach (2010) suggested the importance of health education programs to include research and training as well as provide exposure to evidence-based practice during the academic preparation of future and current practitioners. They also pointed out the value of teaching health educators about the process of accessing information and resources, as well as acquiring the ability to evaluate the quality and accuracy of gathered information (Hill et al., 2010).

There is much evidence that points to the need for clarity regarding public health and health education competencies that are acknowledged within the public health arena as well as by the rest of the professional world. As Woodhouse et al. (2010) asserted, “Competencies are critical for public transparency and accountability because they provide definable benchmarks for assessing practitioner knowledge and skills and for articulating academic program outcomes” (p. E20). Furthermore, competencies are a

critical component of credentialing, certification, and licensure of public health professionals as well as a guiding force in developing workforce trainings and employment/employer specifications (Allegrante et al., 2012; Cottrell et al., 2012; Woodhouse et al., 2010). The need to prepare future and current practitioners of health education with KSAs, which address population-based, behavioral and promotion changes in the ever-changing environment of public health, is critical for the profession (Allegrante et al., 2012).

The PHFCOL's objectives and strategies guide the work they undertake with the end product of integrating the competencies into the public health culture (PHFCOL, 2006). In an effort to realize this overarching idea, their partner organizations include the following: American Public Health Association (APHA), American College of Preventive Medicine (ACPM), Association of Schools and Programs of Public Health (ASPPH), Association for Prevention Teaching and Research (APTR), ASTHO, Association of University Programs in Health Administration (AUPHA), CDC, Community-Campus Partnerships for Health (CCPH), Health Resources and Services Administration (HRSA), NACCHO, National Association of Local Boards of Health (NALBOH), National Environmental Health Association (NEHA), National Library of Medicine (NLM), National Public Health Leadership Development Network (NLN), National Network of Public Health Institutes (NNPHI), Quad Council of Public Health Nursing Organizations (QUAD Council), and SOPHE (PHFCOL, 2006).

As the name implies, PHFCOL's mission is to help provide linkages between academia and the public health workforce. Their strategies for achieving their goals are articulated in the 11 main objectives of the affiliation: (a) encourage linkages; (b) encourage racial/ethnic diversity; (c) enhance education; (d) evaluate education; (e) enhance/assure training; (f) promote COL activities and initiatives; (g) share/develop practice guidelines; (h) link with health care professions; (i) work on performance standards; (j) strengthen research; and (k) support public health workforce recruitment and retention efforts (PHFCOL, 2011).

The PHFCOL developed core competencies to aid in efforts to assist with workforce development. These competencies, specifically titled the *Core Competencies for Public Health Professionals*, were adopted in April 2001 (PHFCOL, 2006). The intent behind the competencies was to assure that the 10 essential public health services can be carried out by the public health workforce; therefore, these competencies have been reviewed and approved by over 1,000 professionals in the field (PHFCOL, 2006). The competencies encompass eight domains: (a) analytic/assessment skills; (b) policy development/program planning skills; (c) communication skills and cultural competency skills; (d) community dimensions of practice skills; (e) basic public health sciences skills; (f) financial planning and management skills; and (g) leadership and systems thinking skills (PHFCOL, 2009). The competencies were specifically developed to help academia and other training entities develop curriculum/course content as well as evaluate public health programs (Allegrante et al., 2001; PHFCOL, 2006; Woodhouse et al., 2010).

As a large percentage of public health activities are carried out by governmental public health agencies at all levels (local, state, and federal), these organizations should also have a vested interest in educating and training the current and future public health workforce. The IOMs recommendations for local, state, and federal health agencies included: (a) assessing the public health workforce development needs in their own state or region; (b) employing collaborations with accredited schools of public health/health education programs; (c) securing public health professionals with an MPH (and/or experience with the ecological theory) in positions of leadership/management; and (d) funding opportunities for the development of curricula, fellowship programs, academic/practice partnerships, and participating in the educational and training activities of schools and programs of public health (IOM, 2003).

Public Health Workforce Competencies

In light of the need for a well-trained public health workforce, professional competencies were revised by the IOM and the CUP (Airhihenbuwa et al., 2005). Several studies have been conducted on training needs of the public health workforce. One research study used a mixed method approach to compare the self-identified training needs of public health educators with the updated competencies (Demers, & Mamary, 2008). Key trends reported were an increase in information technology, the need for policy advocacy skills, and the importance of a lifespan approach to health issues. Primary areas for training were organization development, evaluation, and management (Demers, & Mamary, 2008). An earlier study was designed to test the practicality of the universal competency framework in assessing the training needs of state and local public

health workers and in designing a model training agenda. The results of this research showed the competency framework was a good place to start but was not restrictive enough to adequately assess the training needs of the public health workforce (Potter, Pistella, Fertman, & Dato, 2000).

Measuring the Framework of the Public Health Workforce

Public health professionals are trained and acquire formal education through varied settings and institutes, carry out a wide range of activities in the field, have different backgrounds and training, and are employed in several health-related fields. Therefore, given the wide range of disciplines and characteristics comprising the background of public health professional, the IOM defined a public health professional as “a person educated in public health or a related discipline who is employed to improve health through a population focus” (IOM, 2003, p. 5).

Competencies Framework

Competency-based approaches to workforce education and development are a significant departure from traditional health care, which historically emphasized the completion of formal training, combined with experience, as the essential qualifications for practice. This is not altogether unjustified as the competencies in behavioral healthcare are in a relatively early phase of development, have largely undemonstrated links to health care outcomes, and will likely impact decisions about graduation from training programs as well as certification and licensure (Hoge et al., 2005). It is imperative to better define the knowledge, skills, and abilities that are essential or optimal in the delivery of care and devise training and development initiatives to build these

competencies in the workforce. Collaboration will be a cornerstone of these efforts if they are to succeed (Hoge et al., 2005).

Developing a competent health workforce is a key component of capacity building for the future and is critical to the vision, values, and commitments of global health promotion. An international consensus meeting to identify core competencies, jointly organized by the International Union for Health Promotion and Education (IUHPE), SOPHE and the CDC with participation from international leaders in the field, outlined outcomes of the consensus in terms of strengthening global exchange, collaboration, and common approaches to capacity building and workforce development (Barry et al., 2009). Based on the proceedings of the meeting, a common definition and eight domains of core competencies emerged: catalyzing change, leadership, assessment, planning, implementation, evaluation, advocacy, and partnerships (Barry et al., 2009).

In addition to measurement of the workforce, several studies have indicated there is a growing concern for the development and retention of a competent public health workforce (Barry et al., 2009; Hoge et al., 2009; Lichtveld et al., 2001). Currently, there are no long-term recruitment and education strategies to fill the workforce pipeline under even routine conditions. The gaps in the knowledge base of workforce research require a vigorous and comprehensive systems research agenda to support policy decisions. Given that systems research is already seen as an essential service of public health, many questions about workforce development remain unanswered, providing further substantiation to a requisite systems research. Among the unanswered questions are: (1) What is the “right” balance of partnership efforts between governmental public health

and other professionals or volunteers? (2) How do the core public health competencies translate into effective professional output? (3) What should be tested, how, and on who before a credential is issued? and (4) What evidence relates the MPH or other degree to productivity in the workplace? (Stewart, Halverson, Rose, & Walker, 2010).

It is a complicated and daunting process to establish a single definition of the public health workforce as well as specify the performance requirements of an active workforce, especially one equipped to handle the new challenges and emerging issues of the 21st century (Cahn et al., 2007; Gebbie, Merrill, & Tilson, 2002; Gebbie, Raziano, & Elliott, 2009). Numerous researchers and organizations agree that there is a core group of public health professionals employed by governmental public health agencies (local, state, and national levels) and that these individuals work in close partnership with a wide range of public, private, and voluntary organizations (Cahn et al., 2007; Gebbie, Merrill, & Hwang et al., 2002; Gebbie et al., 2009; Lichtveld et al., 2001). Surrounding the core is an even wider circle of health professional's including physicians, dentists, nurses, and other health, environmental, and public safety professionals. The task of ensuring that this workforce is prepared with skills and knowledge to face both identified and emerging public health challenges is immense (Cahn et al., 2007; Gebbie, Merrill, & Hwang et al., 2002; Gebbie et al., 2009; Lichtveld et al., 2001). This sentiment is reflected in similar findings from ASPH forecasting the ever-increasing public health workforce shortage: "...the extent of the public health workforce shortage remains imprecise, reflecting inconsistent enumeration and the absence of a systematic effort to assess national needs" (ASPH, 2008, p. 4). Within the next few years, state and federal public health agencies

could lose up to half of their workforce; and at least one credible source has identified lack of formal public health training as a component of the impending shortage, indicating that four out of five public health employees lack training (NACCHO, 2012; Perlino, 2006).

A Fragmented Public Health Workforce

The vast nature of public health activities, disciplines, and activities undertaken to improve the health of communities warrants a framework of education and training designed to address the multiple determinants of population health (IOM, 2003). The development of the health education competencies is well documented, dating back to the mid-1970s. The CUP modernized the entry-level competencies and validated the graduate level competencies. The competencies have been used as a framework for hiring, evaluating, and assessing public health professionals in the field. Not only have they been utilized by local and state level organizations but they have also been used by the CDC Centers for Public Health Preparedness, and Health Resources and Service Administrations (HRSA) Public Health Training Centers. Additionally, they have been included in the objectives of Healthy People 2020 and two highly publicized reports by the IOM, *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century* and *The Future of the Public's Health in the 21st Century*, further validating their value (Allegrante, Moon, Auld, & Gebbie, 2001; PHFCOL, 2011).

The assurance of a competent workforce is challenging to establish; even more daunting is the measurement of the workforce itself, something that has still yet to be accomplished with any real accuracy or confidence due to a lack of a tracking and/or system of enumerating the true magnitude of the public health workforce (Cahn et al., 2007; Gebbie et al., 2009; Gebbie, Merrill, Hwang et al., 2002). Workforce enumeration data are vital to describing demographics, identifying shortages and surpluses, tracking trends over time, forecasting future needs, and advocating for resources, yet no current estimate of the size and composition of the public health workforce exists (Cahn et al., 2007). Nevertheless, the 2006–2007 ASTHO workforce enumeration pilot project captured valuable lessons learned from outside areas to inform enumeration strategies for the public health workforce and provided a small step toward the goal of institutionalized workforce enumeration.

In May of 2005, a focus group consisting of representatives from public health organizations and a representative from the Bureau of Labor Statistics resulted in recommendations for workforce enumeration, which stressed the importance of a thorough planning process to accurately assess enumeration (Cahn et al., 2007). Results from the focus group provided a descriptive overview that was based on a review of meeting summaries, published reports, websites, project reports, databases, usage statistics, and personal experiences from offices in the National Library of Medicine (NLM), six organizations that collaborate formally with NLM on the Partners initiative, and one outside funding partner (Cahn et al., 2007).

Focus group members offered five priority action items for public health to consider for its workforce enumeration:

- * *Extract and utilize prior work:* Looking at prior workforce enumeration policy and program research on national, state, and local levels will benefit future enumeration. Better use of existing data will facilitate new efforts.
- * *Begin with a clear purpose:* A vision is critical. What question should the enumeration ultimately answer? What information needs are highest priority?
- * *Define public health and public health workers:* Enumeration efforts should reference a good, but not necessarily perfect, definition of public health.
- * *Set boundaries:* Regardless of how public health workers are defined, resources will limit the detail of data that can be collected. Pick a realistic point at which priority needs can be met with definitions, data collection methods, and strategies chosen.
- * *Count regularly:* Regular counting is the only way to describe workforce trends and estimate future needs (Cahn et al., 2007).

Counting workers presents challenges to many occupations and industries; these challenges have been met in different ways over the last five years. With an effective universal enumeration, some variables (career trajectory, educational history) can be studied by using representative rather than convenience samples (Cahn et al., 2007; Gebbie et al., 2009). Other limited data on workforce infrastructure includes the lack of

data on the size, composition, and distribution of the public health workforce (Lichtveld et al., 2001).

Similarly, agency-level performance measures have been studied with a range of variations in reporting results and accuracy of measures, including what constitutes these measures. In 2000, the CDC convened a group of experts in the fields of public health practice and research to evaluate key conceptual and methodological issues involved in measuring the performance of public health organizations (Mays & Halverson, 2000). Participants engaged in a nominal group process and an electronic polling exercise designed to elicit expert opinions about these issues. Substantial variation was observed in perceptions about the importance of specific measurement concepts and methods. Results highlighted the need for performance measurement systems to reflect multiple organizational perspectives in their design and implementation (Mays & Halverson, 2000).

Competency designation is important for any discipline to define individual performance expectations. Another study utilized a Delphi survey to identify competencies needed by staff to respond to any emergency, including bio-terrorism, yielding competency sets for four levels of workers (Gebbie, Merrill, & Hwang et al., 2002). Focus groups were then conducted to assess the competencies with public health agencies. This feedback validated the Delphi-identified competencies as accurate and necessary for emergency response, which may point to the value of qualitative techniques in discerning competency levels (Gebbie, Merrill, Hwang et al., 2002). In addition to measurement of the workforce, several studies have indicated there is a growing concern

for the development and retention of a competent public health workforce (Barry, Allegrante, Lamarre, Auld, & Taub, 2009; Lichtveld et al., 2001). Moreover, since 2008, the reduction of the public health workforce (41%) and the lack of governmental funding for the public health infrastructure have been largely due to the economic environment (Allegrante et al., 2012; NACCHO, 2012).

In the past, much of the public health workforce research has focused on categorical issues instead of systems issues. Few studies have been conducted on the infrastructure required to support public health activities (Lichtveld et al., 2001). Lichtveld et al. (2001) carried out a multidisciplinary field of inquiry, both basic and applied, that examined the workforce in terms of costs, quality, accessibility, delivery, organization, financing, and outcomes of public health services to increase knowledge and understanding of the relationships among workforce and structure, processes, and effects of public health services. From this study of a panel of experts, a logic model emerged with five priority research areas. These strategies included monitoring workforce compositions and forecasting future workforce needs, identifying competencies and developing curricula, designing an integrated learning system, conducting evaluation and research, and ensuring financial support (Lichtveld et al., 2001).

Other research has focused on specific competency domains of public health such as behavioral health, epidemiology, nutrition, and information technology (Baseman et al., 2008; Hoge et al., 2005; Hoge et al., 2009; Jonsdottir, Hughes, Thorsdottir, & Yngve, 2010; LaPelle, Luckmann, Hatheway-Simpson, & Martin, 2006).

In terms of information technology, a qualitative study of interviews and focus group discussions was undertaken by the investigators that combined three objectives previous researchers have generally pursued individually: (1) characterization of information needs of practitioners, (2) identification of typical information seeking behaviors, and (3) assessment of barriers to information access (LaPelle et al., 2006).

Further investigation is needed in other public health disciplines to test the applicability of these findings in other public health domains because of the wide variation in content and nature of public health practices. Results also indicated that many critical information needs of public health practitioners are not being met efficiently if at all; however, incremental improvements to information access are being made (LaPelle et al., 2006). Therefore, investigators have suggested that organizations concerned about practitioners' access to information operate collaboratively to sponsor further research to evaluate emerging information systems, fund joint research projects, and encourage small scale trials of some new systems for information access (LaPelle et al., 2006).

Academic Curriculum and Competencies

The IOMs milestone report *The Future of Public Health* significantly scrutinized the relationship between academia and the professional practice of public health. The report set a framework and provided recommendations for strengthening public health education, research, and practice for use by “the institutions and organizations responsible for educating public health professionals and supporting public health education” (IOM, 2003, p. 7). Several reports that followed this monumental report also

advocated for more concise and unified competencies and learning objectives for the curricula in institutes of higher education (IOM, 2003; Woodhouse et al., 2010).

Other research has been conducted with students in public health programs in relation to their field experiences and training, then “mapping” how they align with the competencies specific to their concentration (Montgomery, Durbeck, Thomas, Beck, Sarigiannis, & Boulton, 2010). Additional research visited the other side of the spectrum to assess what areas those currently employed in the field of public health felt they needed additional training in and how those areas matched with the NCHEC competencies. Participants identified the following competencies as those for which they needed additional training: (a) designing data collection instruments, (b) securing fiscal resources, (c) interpreting evaluation and research results, (d) carrying out evaluation and research plans, and (e) developing plans for evaluation and research (Davidson, 2008).

Participants also identified the following competencies as being the most relevant to their current positions: (a) demonstrating a variety of skills in delivering strategies, interventions, and programs; (b) using a variety of methods to implement strategies, interventions, and programs; (c) initiating a plan of action; and (d) using health-related information resources (Davidson, 2008). Another survey was administered to current and potential employers regarding their knowledge, attitudes, and behaviors toward health educators and the health education profession as well as their future hiring practices (Gambescia et al., 2009). This survey’s primary purpose was to gain insight about the level of education of professionally prepared health educators who are practicing in the

field of health educators as well as how these individuals are identified and employed in the workplace (Gambescia et al., 2009).

Connecting Academic Programs with Local Public Health

In 1998, 78 state and local public health agency supervisors from Maine, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont and academicians at the national, state, and local levels participated in assessing and prioritizing the training needs of public health workers (Potter et al., 2000). The project convened regional and national public health leaders in two working groups: (1) a curriculum design team of 16 members, including academicians, continuing education directors, and senior agency personnel drawn from the same northeastern states as the supervisors; and (2) a national advisory committee of 12 members, including leading academicians and representatives from national public health professional groups and associations and federal agencies. The results illustrated the differences among training priorities of various agency supervisors and showed how these differences could be recognized and addressed in a relatively standardized training agenda (Potter et al., 2000).

In August of 2003, 23 institutions submitted proposals to build closer ties between state and local public health departments and schools of public health in response to a solicitation from the ASPH and support from the CDC. A qualitative analysis detected five principal approaches: (a) the development of comprehensive planning processes, (b) reform of the way practica are planned and implemented, (c) the identification and nurturing of boundary-spanning individuals in academia and health agencies, (d) the fostering of new approaches to joint research, and (e) workforce development programs

(Conte, Chang, Malcolm, & Russo, 2006). Major themes that emerged included: (1) the importance of achieving a balance of power between academic and health department partners, (2) the need to address cultural differences between institutions, (3) a conviction that efforts at institutional change require both strong leadership and the cultivation of boundary spanners farther down the chain of command, and (4) the idea that prospects for success may be improved if faculty and practitioners have tangible incentives to collaborate (Conte et al., 2006).

Two overarching themes that came out of the analysis were the need to document existing linkages and identify best practices, and improve the practicum experience. (Conte et al., 2006). Conte et al. (2006) reported that over half of the respondents indicated that the service-learning portions of some of these programs are inadequate at meeting student and agency needs for many reasons, such as the inability to meet student internship needs; difficulty in matching student interest with the appropriate agencies; unavailable/unhelpful site preceptors (student identified); management issues (e.g. students require more time/effort than preceptors have); and/or lack of support/availability of faculty advisors (academician/preceptor identified).

Additionally, two other prominent themes emerged almost universally. First, cultural differences were identified as a barrier between academia and public health departments as both entities' criteria for evaluating performance are vastly different. Second, the difference in the "driving force" behind academia and practice-based organizations is problematic as the first is typically theory-driven while the latter is primarily problem-driven (Conte et al., 2006).

Summary and Conclusion

There is insufficient regarding the competencies of the public health workforce, how these competencies actually translate from academic training programs to performance in the field, and more importantly, what the perceptions of current public health employers and/or supervisors of the public health workforce feel is missing from the skill sets of their employees. Therefore, the intent of this study was to identify what gaps exist between academia and practical application of workers who graduate from competency-based academic programs in health education.

The Council's core competencies appear to be an effective tool in guiding workforce development programs and serve as an important framework for assessing comprehensive interdisciplinary training programs. Such programs can substantially increase public health professionals' self-assessed competence in the Linkages domains (Stewart et al., 2010). Advancing the field of public health requires aligning fragmented efforts to collect workforce data and updating the necessary needed statistics on the size and composition of the workforce. The results of this alignment and updating will inform nationwide activities to recruit and retain a strong public health workforce (Gebbie et al., 2009). Without a robust workforce, "a public health agency is as useless as a new hospital with no physicians, nurses, or technicians" (Gebbie, Merrill, Hwang et al., 2007, p. 65).

CHAPTER III

METHODOLOGY

The purpose of this research study was to measure the competency levels of currently employed, academically trained health educators by surveying employing supervisors or administrators of local health departments/local health agencies (LHD/LHAs) to determine which competencies (knowledge, skills, and attitudes/attributes [KSAs]) are being met and not being met by professional public health educators. Results from this study should contribute to the assessment of the public health workforce and potentially contribute to meeting the needs of the contemporary workforce development of academically trained health educators. The researcher employed a cross-sectional, mixed-methods design to collect both qualitative and quantitative data by using a concurrent, nested strategy. This approach helped to facilitate an understanding of the correlation between EPHS and competencies as well as the perceived value of academically trained health educators in the local public health workforce.

Population and Sampling

The sample population of interest for this study was derived from all LHD/LHAs listed in the 2013 National Association of County & City Health Officials (NACCHO) Index of Local Public Health Departments, which includes listings of over 1,500 LHD/LHAs in the continental US (NACCHO, 2013). Initially, the researcher contacted a

representative at NACCHO inquiring if there was a listserv of LHD/LHAs that could be utilized for this study. The request was denied; NACCHO does not provide this information to an individual, organization, or agency as this is an oversampled population (K. Ruben, personal communication, August, 2013).

Therefore, in order to obtain the sample, the researcher acquired each e-mail address by individually searching every state and subsequent city/county of the entire NACCHO index of LHD/LHAs. Additionally, due to the fact that membership in NACCHO requires each organization (or individual) to join at a fee as well as update the most current information for their agency, many of the electronic records were out-of-date (undeliverable). Of the 1,506 e-mail addresses listed in the directory (NACCHO, 2013), 553 were undeliverable, which indicated that several LHD/LHAs did not contain updated information and resulted in a final sample population of 1,003.

Protection of Human Participants

A proposal for exempt review status was submitted to the Institutional Review Board (IRB) at Texas Woman's University. All measures were taken to assure the protection of human participants, and exempt approval of this study was granted by the IRB at Texas Woman's University. This study qualified for exempt review due to the fact that all personal identifiers were not collected. These identifiers included the name, title, e-mail address, and jurisdiction of each respondent that could not be connected to the individual completing the survey. Additionally, there was a separate data set for those who wished to know the results of the research study which were not linked to the

survey participant. As a result of these precautions, minimal risks to the participants were involved in this study.

Data Collection Procedures

This study was an analysis of primary data collected by the researcher. This was a cross-sectional investigation, and the data collection procedure used an online, confidential survey (PsychData) delivered via e-mail to each potential participant.

Instrumentation

The survey instrument for this study was constructed by the researcher using Dillman's (2000) Tailored Design Method (TDM) for constructing surveys. This was a pilot study, as the survey instrument had not been utilized previously and was designed by the researcher with content analysis assistance from health education faculty members. Content and construct validity, readability, internal consistency and alternate form reliability, coding issues, and EPHS/NCHEC alignment were conducted by health education faculty. Adjustments were made as necessary, including grouping similar competencies together as well as overlapping EPHSs in order to streamline and shorten the overall total of questions. Ordinal variables were revised to be measured categorically. The questionnaire was constructed with statements from the tenets of the 10 EPHS and NCHEC competencies (see Table 1) and used measurements of the DVs of competency levels and KSA requirements as well as the IVs of the number of health educators employed by LHD/LHA, length of time employed, education levels/credentials, location of LHD/LH, and size of the population served.

The sampling frame was stratified by jurisdiction/size to ensure adequate representation from each region within the US by agency size/population served. Due to the fact that this investigation measured the competencies and/or proficiencies of professional public health educators, only LHD/LHA directors/administrators of public health educators were invited to participate in the study.

Table 1

NCHEC Competencies and the 10 ESPH

NCHEC Competency Areas	ESPH 1: Monitor health status to identify community health problems	ESPH 2: Diagnose & investigate health problems & health hazards in the community	ESPH 3: Inform, educate, & empower people about health issues	ESPH 4: Mobilize community partnerships to identify & solve health problems	ESPH 5: Develop policies & plans that support individual & community health efforts	ESPH 6: Enforce laws & regulations that protect health & ensure safety	ESPH 7: Link people to needed personal health services and assure the provision of health care when otherwise unavailable	ESPH 8: Assure a competent public health & personal health care workforce	ESPH 9: Evaluate effectiveness, accessibility, & quality of personal & population-based services	ESPH 10: Research for new insights & innovative solutions to health problems
Area 1: Assess needs, assets & capacity for health education	X	X	X		X	N/A	X			X
Area 2: Plan health education	X			X	X	N/A			X	X
Area 3: Implement health education		X	X	X	X	N/A	X	X	X	X

(Continued)

NCHEC Competency Areas	ESPH 1: Monitor health status to identify community health problems	ESPH 2: Diagnose & investigate health problems & health hazards in the community	ESPH 3: Inform, educate, & empower people about health issues	ESPH 4: Mobilize community partnerships to identify & solve health problems	ESPH 5: Develop policies & plans that support individual & community health efforts	ESPH 6: Enforce laws & regulations that protect health & ensure safety	ESPH 7: Link people to needed personal health services and assure the provision of health care when otherwise unavailable	ESPH 8: Assure a competent public health & personal health care workforce	ESPH 9: Evaluate effectiveness, accessibility, & quality of personal & population-based services	ESPH 10: Research for new insights & innovative solutions to health problems
Area 4: Conduct evaluation & research related to health education		X			X	N/A			X	X
Area 5: Administer & manage health education			X	X		N/A	X	X	X	
Area 6: Serve as a health education resource person						N/A	X	X	X	X
Area 7: Communicate & advocate for health & health education	X	X	X	X	X	N/A	X	X	X	X

A two-step process was employed to administer the survey. The first round of recruiting participants was made via e-mail and an online version of the questionnaire using PsychData. A “cover letter” consent e-mail explained the purpose of the survey, provided instructions for responding, inquired if the person receiving the e-mail was the appropriate person to be answering the questionnaire, and prompted the recipient to forward the survey to the appropriate person (manager/supervisor) of the health educator(s), if necessary (see Appendix A). Using electronic invitations to participate, each LDH/LAH was asked to complete an online, confidential survey about the competency levels and KSAs of health educators or those fulfilling the duties of a health educator within their respective organizations. At intervals of approximately three and six weeks after the initial e-mail was deployed, reminder e-mails were sent to non-respondents (see Appendix B). The survey was available online for approximately two months.

In order to ensure the participants answered questions about health educators specifically and not other public health or education professionals, the term *health educator* was defined in the e-mail sent to each potential participant. Additionally, if the duties traditionally conducted by a health educator were undertaken by someone else, the title of that person was identified. The questionnaire was structured primarily with closed-ended questions; a few open-ended questions were included for clarification of proficiencies and/or deficits of health educators in the workforce.

Major areas of the survey included soliciting information from the respondents about: (1) their perception of the competency levels of health educators, (2) hiring and employment practices of health educators, (3) understanding what activities are performed by and who performs the work of health education in their agencies, (4) deficiencies in the KSAs of health educators in the workforce, and (5) perceived value of employing academically trained health educators.

Data Analysis

The Statistical Package for Social Sciences (SPSS), version 21, was used to conduct descriptive, inferential, and categorical analyses for this pilot study. Descriptive statistics (frequencies and percentages) were employed to describe the basic demographics of the sample populations, including stratification of respondents by agency size and jurisdiction/region. Other results were expressed using mean values and percentages for the number of titled health educators, length of time employed, titles of others performing health education activities, as well as the importance of health education at each LHD/LHA.

Pearson's chi-squared comparisons were conducted for the KSA questions and characteristics of both the NCHEC and EPHS to assess relationships between the dependent variables (NCHEC competencies and the 10 EPHS) and the independent variables (academically trained health educators and other public health professionals conducting health education) with the significance level set at $p \leq .05$.

Additionally, the Fisher's exact test was utilized to assess the exact probability that the chi-squared statistics were accurate due to the smaller sample size scores in different groups (significance level set at $p \leq .05$). Actual mastery scores have been described categorically with a range from competent (highest order) to not competent (lowest order). Open-ended questions (qualitative data) have been analyzed and quantified using overarching emic themes and concepts.

Summary

Through this pilot study, the researcher constructed a national web-based survey and collected data to explore one collective set of employers of health educators. As the literature has shown, it is almost impossible to gather the demographics for all employers of health educator(s) in the variety of settings in which they are potentially employed. Due to this fact, the selection of a specific target group was designed to collect and analyze one group of agencies that utilize health education to achieve organizational objectives and goals.

Data was collected between February and April of 2014 from all LHD/LHAs in the NACCHO 2013 Index of Local Public Health Departments. Validated and reliable analyses and instrumentation were utilized to estimate the difference in KSAs and NCHEC levels, which were the outcome variables of this study. SPSS (v21) was used to conduct descriptive and categorical analyses of the data in order to answer the research questions and test the hypotheses of this study.

CHAPTER IV

RESULTS

Sample Description

The initial sample population consisted of 1,003 potential participants that were listed as Local Health Departments/Agencies (LHD/LHAs) within the United States from the 2013 National Association of County & City Health Officials (NACCHO) Index of Local Public Health Departments (NACCHO, 2013). The total number of LHD/LHAs that elected to participate was 203. Of these, any participants who started the survey but did not complete a majority of the questions were removed, resulting in a final sample size of 195 participating LHD/LHAs. Additionally, eight (8) participants indicated there was no one performing health education activities in their organization. They were not included in the statistical analysis of the results. Therefore, for the quantitative portion of the analysis, the total sample size was 187. However, the eight participants that had no one performing health education were included in the qualitative portion as they answered questions pertaining to why no one was conducting health education activities within their organizations and what factors hindered these activities (research question three (3), see Table 16).

Almost 60% of the respondents reported employing at least one (1) person with the title of health educator, while about 40% indicated employing no one with that specific job classification/title (see Table 2). As shown in Table 3, the levels of

education reported by Health Directors/Administrators' included those with the following credentials: Registered Nurses (24.6%), Certified Health Education Specialist (CHES) (18.2%), Bachelor's in Health Education (11.2%), Bachelor's Degree (10.2%), Nursing Degrees (7.5%), and Master's Degree (6.4%).

Table 2

Prevalence of Titled Health Educators

Employs Someone with the Title of Health Educator	n	%
Yes	112	59.9
No	75	40.1

Note. n = 187.

Table 3

Prevalence of Education/Credentials of Titled Health Educators

Credentials of Health Educators	n	%
Registered Nurses (RN)	46	24.6
Certified Health Education Specialist (CHES)	34	18.2
Bachelor's in Health Education	21	11.2
Bachelor's Degree	19	10.2
Nursing Degree	14	7.5
Master's Degree	12	6.4

Note. n = 112.

Additionally, the title(s) of additional personnel administering health education (see Table 4) as well included RN/Public Health Nurses (PHN) (27.3%), Health Directors (20.9%), Nutritionist (18.7%), Environmental Health Specialist (15%), *Others* (15%) including: Lay health promoters, Tobacco Prevention Specialist, interns, other staff, Grant Coordinators, Dental Hygienists, WIC Home Economist (15%), Health Services

Manager (13.8%), other Environmental Staff (8%), Epidemiologist (7.5%), and Administrative/Clerical staff (6.4%).

Table 4

Prevalence of Additional Personnel Administering Health Education

Titles of Other Personnel Administering Health Education	n	%
RN/PHNs	51	27.3
Health Directors	39	20.9
Nutritionist	35	18.7
Environmental Health Specialists	28	15.0
Others	28	15.0
Health Services Manager	25	13.8
Other Environmental Staff	15	8.0
Epidemiologist	14	7.5
Administrative/Clerical Staff	12	6.4

Note. n = 187. *Others* included Lay Health Promoters, Tobacco Prevention Specialist, Interns, Other Staff, Grant Coordinators, Dental Hygienists, and WIC Home Economist.

Conversely, 40% of LHD/LHAs employing someone in other role(s) who perform activities of health education and/or administering health education (see Table 5), categorically included the title(s) of RN/PHNs (33.2%), Nutritionist (18.7%), Environmental Health Specialist (17.6%), Administrative/Clerical staff (9.1%), Health Director (8.6%), Health Services Manager (4.8%), Other Environmental Staff (4.8%), *Others* (2.1%) including: Lay health promoters and interns, and Epidemiologists (1.6%).

Table 5

Prevalence of Titled Other Personnel Performing Activities of Health Education

Title of Others Who Perform Activities of Health Education	n	%
RN/PHN	62	33.2
Nutritionist	35	18.7
Environmental Health Specialist	33	17.6
Administrative/Clerical Staff	17	9.1
Health Director	16	8.6
Health Services Manager	9	4.8
Other Environmental Staff	9	4.8
Others	4	2.1
Epidemiologist	3	1.6

Note. n = 187. *Others* included Lay Health Promoters and Interns

The demographic distribution of participating LHD/LHAs by populations served with both titled health educators and others administering health education is shown in Table 6. For those LHD/LHAs that reported having titled health educators, the population size served had three major groupings: 25,000-49,999 (14%), 50,000-99,999 (18%), and 100,000-249,999 (18%). As for those agencies reporting population served by non-titled health educators, the major groupings were as follows: <10,000 (15%), 10,000-24,999 (18%), 25,000-49,999 (14%), and 50,000-99,999 (12%). As seen in Figure 1, the US geographic regions from which respondents participated had a fairly equal representation with a larger percentage from the Midwestern region (32%), followed almost equally by the Northeast region (24%), the Southern region (22%), and the Western region (22%).

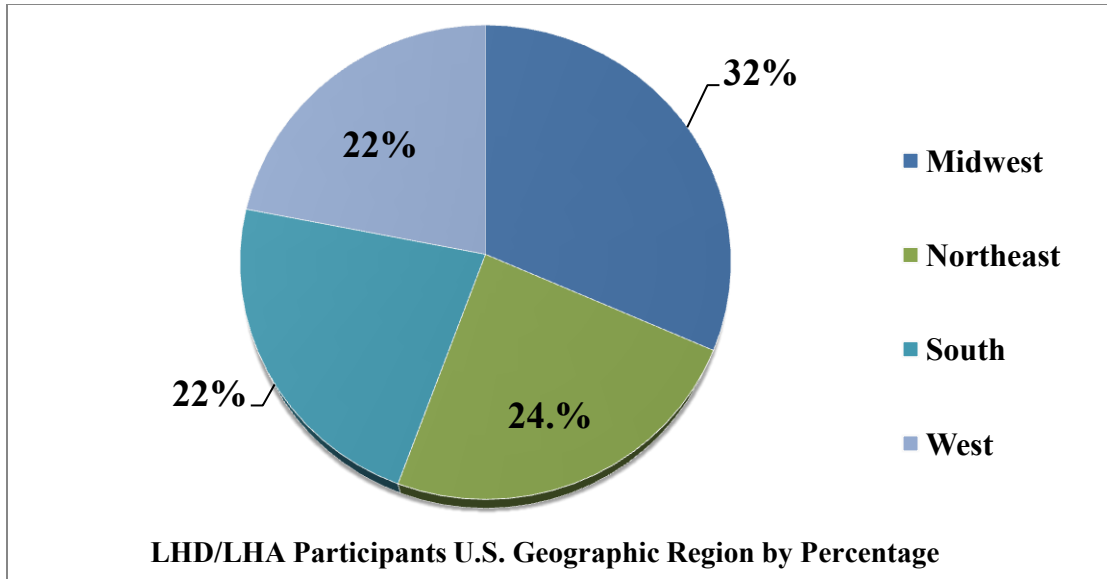


Figure 1. Prevalence of respondents by US geographic region. (n = 187)

Table 6

Prevalence of Population Served by LHD/LHA

Population Served	Employs Health Educator	Does Not Employ Health Educator
<10,000	1%	16%
10,000-24,999	2%	22%
25,000-49,999	19%	18%
50,000-99,999	21%	12%
100,000-249,999	28%	10%
250,000-499,999	17%	1%
500,000-999,999	7%	4%
>999,999	5%	0%

Note. n = 187.

The number of health educators employed by each agencies as well as length of time in their position(s) can be seen in Table 7 and Table 8. The most prevalent categories for the number of health educators employed by LHD/LHA included: 1 health

educator (32.1%), 2 health educators (17.9%), 3 health educators (12.5%), and 4 health educators (8.9%). The length of time that each health educator had been employed with the LHD/LHA resulted in 3 major categories: those over 15 years (12.5%), those between 5 -10 years (5.4%), and those who have been employed 10 – 15 years (4.5%).

Table 7

Prevalence of Health Educators Employed by LHD/LHA

Health Educators employed by LHD/LHA	n	%
1	36	32.1
2	20	17.9
3	14	12.5
4	10	8.9
5	9	8.0
6	3	2.6
7	2	1.8
8	3	2.6
Other	20	17.9

Note. n = 112. *Other(s)* included less than 1.0 FTE, part-time, and contracted personnel.

Table 8

Prevalence of Length of Employment with LHD/LHA

Length of Employment	n	%
< 6 months	3	2.6
> 6 months - 1 year	3	2.6
> 1 year - 3 years	2	1.8
> 3 years - 5 years	1	1.6
> 5 years - 10 years	6	5.4
> 10 years - 15 years	5	4.5
> 15 years	14	12.5

Note. n = 112.

Primary Analyses

Percentages Testing for Research Question One

The first research question set contained 57 questions from both the tenets of the 10 EPHS and NCHEC competencies (see Chapter III, Table 1, pages 5 - 6) and asked the respondents to rate the competency levels of core public health activities that academically trained health education professionals possess as: a) competent; b) not competent; and c) not applicable at this workplace. Categorically, no one selected *not applicable at this workplace*. The structure of the questions combined overlapping elements of EPHS and NCHEC, when possible, with the remaining questions composed of an array of fundamental constructs from both tenets of EPHS and NCHEC.

Table 9 displays the percentages of participants employing academically trained health educators and the rating of their competency levels. In this sample of US LHD/LHA agencies, 73.2% were proficient at informing, educating, and empowering people about health issues; 72.3% were competent in addressing factors that affect implementation of intervention and/or prevention services; 71.4% were effective at both engaging professional development activities and facilitating collaborative efforts to achieve program goals; 70.5% were knowledgeable at facilitating partnerships, facilitating collaboration and partnerships to ensure participation of key stakeholders, and complying with laws and regulations; 69.6% could link people to needed health services; 68.8% were skilled at implementing training programs; 67.9% were capable of applying ethical principles, facilitating cooperation among those who are responsible for health education, and communicating health information to stakeholders and priority

populations; and 67% were competent at identifying and prioritizing health education needs, communicating the need for health education to priority populations and other stakeholders, and analyzing the opportunity for integrating health education into other programs.

Table 9

Prevalence of Competency Levels in Academically Trained Health Educators

Competencies	Competent	
	n	%
Inform, educate, & empower people about health issues	82	73.2
Address factors that affect implementation of intervention &/or prevention services	81	72.3
Engage in professional development activities	80	71.4
Facilitate collaborative efforts to achieve program goals	80	71.4
Facilitate partner relationship(s)	79	70.5
Facilitates collaboration and partnerships to ensure participation of key stakeholders	79	70.5
Comply with existing laws and regulations	79	70.5
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	78	69.6
Implement training sessions and programs	77	68.8
Facilitate cooperation among stakeholders responsible for health education	76	67.9
Apply ethical principles in consultative relationships	76	67.9
Convey health-related information to key stakeholders & priority populations	76	67.9
Identify & prioritize health education needs	75	67.0
Communicate need for health education to priority populations and other stakeholders	75	67.0
Analyze the opportunity for integrating health education into other programs	75	67.0
Facilitate professional growth of self & others	74	66.1
Communicate findings to stakeholders	73	65.2
Assess capacity of potential partner(s) to meet program goals	73	65.2
Apply appropriate methods for team development	72	64.3

Competencies	Competent	
	n	%
Monitor implementation of health education plans and/or programs	71	63.4
Use techniques that empower individuals and communities to improve their health	70	62.5
Determine the range of health education needed to achieve goals and objectives	70	62.5
Apply principles of cultural competence in selecting/designing strategies & interventions	70	62.5
Use data to support advocacy messages	69	61.6
Identify current and emerging issues that may influence health and health education	69	61.6
Use strategies to ensure cultural competence in implementing health education plans	69	61.6
Mobilize community partnerships to identify & solve health problems	69	61.6
Conduct searches of existing databases for specific health-related data	69	61.6
Use assessment results to inform the planning process	68	60.7
Identify & analyze factors that influence health behaviors	68	60.7
Identify existing and needed resources to conduct assessments	67	59.8
Develop a process for integrating health education into other programs	67	59.8
Develop a process for integrating health education into other programs	67	59.8
Identify desired outcomes utilizing the needs assessment results	66	58.9
Tailor messages to priority populations	66	58.9
Advocate for health-related policies, regulations, laws, or rules	66	58.9
Analyze an organization's culture in relationship to health education goals	66	58.9
Monitor health status to identify community health problems	65	58.0
Identify existing data collection instruments	65	58.0
Identify & analyze factors that enhance or compromise health	64	57.1
Employ technology to communicate to priority populations	64	57.1
Analyze factors that influence decision-makers	62	55.4
Enforce laws and regulations that protect health and ensure safety	61	54.5
Assure a competent public health and personal health care workforce	60	53.6
Analyze & synthesize assessment findings	60	53.6

Competencies	Competent	
	n	%
Diagnose and investigate health problems & health hazards in the community	59	52.7
Collect & Integrate primary & secondary data	59	52.7
Demonstrate a wide range of training strategies	59	52.7
Develop volunteer opportunities	58	51.8
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	57	50.9
Incorporate media and technology in advocacy	55	49.1
Interpret results of the evaluation & research	54	48.2
Research for new insights & innovative solutions to health problems	51	45.5
Develop data collection instruments and methods	47	42.0
Develop plans for data collection, analysis, and interpretation	47	42.0
Integrate research designs, methods, and instruments into assessment plan	46	41.1
Design instruments to collect data for evaluation & research	45	40.2

Note. n = 112.

In contrast, the respondents categorized the competencies in which academically trained health educators were least effective as well (see Table 10). Thirty three percent were ineffective at designing data collection instruments for evaluation and research; 30.4% were deficient in the ability to develop plans for data collection, analysis, and interpretation; 27.7% were lacking the ability to develop data collection instruments and methods; 26.8% were not competent at integrating research designs, methods, and instruments into assessment plans; 22.3% were less skilled at incorporating media and technology in advocacy; 20.5% were ineffective at analyzing and synthesizing assessment results, collecting and integrating primary data, and demonstrating a large range of training strategies; and 19.6% were not competent at interpreting evaluation and

research results, analyzing an organization's culture in relationship to health education goals, and evaluating effectiveness, accessibility, and quality of personal and/or population-based services.

Table 10

Prevalence Levels of Less Competent Academically Trained Health Educators

Competencies	Not Competent	
	n	%
Design instruments to collect data for evaluation & research	37	33.0
Develop plans for data collection, analysis, and interpretation	34	30.4
Develop data collection instruments and methods	31	27.7
Integrate research designs, methods, and instruments into assessment plan	30	26.8
Incorporate media and technology in advocacy	25	22.3
Research for new insights & innovative solutions to health problems	23	20.5
Collect & Integrate primary & secondary data	23	20.5
Demonstrate a wide range of training strategies	23	20.5
Analyze & synthesize assessment findings	23	20.5
Interpret results of the evaluation & research	22	19.6
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	22	19.6
Analyze an organization's culture in relationship to health education goals	22	19.6
Analyze factors that influence decision-makers	21	18.8
Employ technology to communicate to priority populations	20	17.9
Identify & analyze factors that enhance or compromise health	17	15.2
Advocate for health-related policies, regulations, laws, or rules	17	15.2
Assure a competent public health and personal health care workforce	16	14.3
Develop a process for integrating health education into other programs	16	14.3
Apply principles of cultural competence in selecting/designing strategies & interventions	16	14.3
Apply appropriate methods for team development	16	14.3
Identify existing data collection instruments	15	13.4

Competencies	Not Competent	
	n	%
Develop a process for integrating health education into other programs	15	13.4
Tailor messages to priority populations	14	12.5
Identify & analyze factors that influence health behaviors	14	12.5
Determine the range of health education needed to achieve goals and objectives	14	12.5
Assess capacity of potential partner(s) to meet program goals	14	12.5
Develop volunteer opportunities	13	11.6
Diagnose and investigate health problems & health hazards in the community	13	11.6
Identify existing and needed resources to conduct assessments	13	11.6
Mobilize community partnerships to identify & solve health problems	13	11.6
Analyze the opportunity for integrating health education into other programs	13	11.6
Identify desired outcomes utilizing the needs assessment results	12	10.7
Monitor health status to identify community health problems	11	9.8
Use techniques that empower individuals and communities to improve their health	11	9.8
Communicate findings to stakeholders	11	9.8
Communicate need for health education to priority populations and other stakeholders	11	9.8
Identify current and emerging issues that may influence health and health education	10	8.9
Use strategies to ensure cultural competence in implementing health education plans	10	8.9
Monitor implementation of health education plans and/or programs	10	8.9
Enforce laws and regulations that protect health and ensure safety	9	8.0
Use assessment results to inform the planning process	9	8.0
Use data to support advocacy messages	9	8.0
Address factors that affect implementation of intervention &/or prevention services	9	8.0
Facilitate professional growth of self & others	8	7.1
Apply ethical principles in consultative relationships	7	6.3
Implement training sessions and programs	7	6.3

Competencies	Not Competent	
	n	%
Facilitate cooperation among stakeholders responsible for health education	5	4.5
Comply with existing laws and regulations	5	4.5
Engage in professional development activities	4	3.6
Facilitate collaborative efforts to achieve program goals	4	3.6
Facilitates collaboration and partnerships to ensure participation of key stakeholders	4	3.6
Facilitate partner relationship(s)	3	2.7
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	3	2.7
Inform, educate, & empower people about health issues	2	1.8

Note. n = 112.

Percentages Testing for Research Question Two

The second research question set contained 48 questions from both the tenets of the 10 EPHS and NCHEC competencies (see Chapter III, Table 1, pages 5 - 6) and asked the respondents to rank the need for training in KSA levels of core public health activities of academically trained health education professionals as: a) high need; b) moderate need; c) low need; and d) no need. As previously stated with the competency levels, the structure of the KSA questions combined overlapping elements of EPHS and NCHEC, when possible, with the remaining questions composed of an array of core constructs from both tenets of EPHS and NCHEC.

The most prevailing constructs that were identified by participants in the high need category are shown in Table 11. Of the 48 questions, those answers selected with highest needs included: 42% need additional KSAs to use techniques that empower individuals and communities to improve their health; 41.1% were selected for evaluating effectiveness, accessibility, and quality of personal and/or population-based services as

well as their ability analyze and synthesize assessment findings; 40.2% were selected for improvement in areas of their ability to interpret the results of evaluation and research as well as addressing factors that affect implementation of intervention and/or prevention services along with communicating the need for health education to priority populations and other stakeholders. Additionally, 38.4% were selected for additional skills to communicate findings to stakeholders; 37.4% had high needs in their ability to tailor messages to priority populations, incorporate media and technology in advocacy, and mobilizing community partnerships to identify and solve health problems; and 36.6% need additional KSAs to inform, educate, and empower people about health issues, monitor implementation of health education plans and/or programs, develop plans for data collection, analysis, and interpretation, and analyze the opportunity for integrating health education into other programs.

Table 11

High Need for Training in KSAs of Academically Trained Health Educators

Knowledge, Skills, and Activities (KSAs)	High Need	
	n	%
Use techniques that empower individuals and communities to improve their health	47	42.0
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	46	41.1
Analyze & synthesize assessment finding	46	41.1
Interpret results of the evaluation & research	45	40.2
Address factors that affect implementation of intervention &/or prevention services	45	40.2
Communicate need for health education to priority populations and other stakeholders	45	40.2
Communicate findings to stakeholders	43	38.4
Tailor messages to priority populations	42	37.5

Knowledge, Skills, and Activities (KSAs)	High Need	
	n	%
Incorporate media and technology in advocacy	42	37.5
Mobilize community partnerships to identify & solve health problem	42	37.5
Inform, educate, & empower people about health issues	41	36.6
Monitor implementation of health education plans and/or programs	41	36.6
Develop plans for data collection, analysis, and interpretation	41	36.6
Analyze the opportunity for integrating health education into other programs	41	36.6
Identify & analyze factors that influence health behaviors	40	35.7
Identify & analyze factors that influence health behaviors	40	35.7
Employ technology to communicate to priority populations	40	35.7
Monitor health status to identify community health problems	39	34.8
Identify desired outcomes utilizing the needs assessment results	38	33.9
Use assessment results to inform the planning process	37	33.0
Integrate research designs, methods, and instruments into assessment plan	37	33.0
Research for new insights & innovative solutions to health problems	37	33.0
Design instruments to collect data for evaluation & research	37	33.0
Use strategies to ensure cultural competence in implementing health education plans	35	31.3
Identify current and emerging issues that may influence health and health education	35	31.3
Identify & prioritize health education needs	35	31.3
Use data to support advocacy messages	35	31.3
Facilitate cooperation among stakeholders responsible for health education	35	31.3
Collect & Integrate primary & secondary data	35	31.3
Determine the range of health education needed to achieve goals and objectives	35	31.3
Facilitate collaborative efforts to achieve program goals	34	30.4
Apply principles of cultural competence in selecting/designing strategies & interventions	34	30.4
Identify potential partner(s)	33	29.5
Assure a competent public health and personal health care workforce	33	29.5
Identify priority populations	32	28.6
Identify & analyze factors that enhance or compromise health	32	28.6
Facilitate partner relationship(s)	32	28.6
Develop data collection instruments and methods	31	27.7
Identify existing and needed resources to conduct assessments	30	26.8

Knowledge, Skills, and Activities (KSAs)	High Need	
	n	%
Develop a process for integrating health education into other programs	30	26.8
Conduct searches of existing databases for specific health-related data	30	26.8
Identify existing data collection instruments	27	24.1
Engage in professional development activities	27	24.1
Diagnose and investigate health problems & health hazards in the community	25	22.3
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	24	21.4
Comply with existing laws and regulations	22	19.6
Develop volunteer opportunities	17	15.2
Enforce laws and regulations that protect health and ensure safety	17	15.2

Note. n = 112.

As shown in Table 12, the prevalence of moderate needs for KSAs of academically trained health education professionals included being able to diagnose and investigate health problems and health hazards in the community (42.9%); developing data collection instruments and methods as well as difficulty collecting and integrate primary and secondary data (42%). Additionally, 40.2% need additional training to engage in professional development activities and to determine the range of health education needed to achieve goals and objectives; 39.3% had deficiencies in conducting searches of existing databases for specific health-related data, while 38.4% had moderate needs to develop a process for integrating health education into other programs and assuring a competent workforce. Additional training needs included both identifying existing and needed resources to conduct assessments and identifying existing data collection instruments (37.5%).

Table 12

Moderate Need for Training in KSAs of Academically Trained Health Educators

Knowledge, Skills, and Activities (KSAs)	Moderate Need	
	n	%
Diagnose and investigate health problems & health hazards in the community	48	42.9
Develop data collection instruments and methods	47	42.0
Collect & Integrate primary & secondary data	47	42.0
Engage in professional development activities	45	40.2
Determine the range of health education needed to achieve goals and objectives	45	40.2
Conduct searches of existing databases for specific health-related data	44	39.3
Develop a process for integrating health education into other programs	43	38.4
Assure a competent public health and personal health care workforce	43	38.4
Identify existing and needed resources to conduct assessments	42	37.5
Identify existing data collection instruments	42	37.5
Facilitate collaborative efforts to achieve program goals	41	36.6
Identify desired outcomes utilizing the needs assessment results	40	35.7
Design instruments to collect data for evaluation & research	40	35.7
Identify & prioritize health education needs	39	34.8
Integrate research designs, methods, and instruments into assessment plan	39	34.8
Use data to support advocacy messages	39	34.8
Analyze & synthesize assessment finding	39	34.8
Identify & analyze factors that enhance or compromise health	38	33.9
Use strategies to ensure cultural competence in implementing health education plans	37	33.0
Identify current and emerging issues that may influence health and health education	37	33.0
Identify & analyze factors that influence health behaviors	37	33.0
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	37	33.0
Develop plans for data collection, analysis, and interpretation	37	33.0
Analyze the opportunity for integrating health education into other programs	37	33.0

Knowledge, Skills, and Activities (KSAs)	Moderate Need	
	n	%
Use techniques that empower individuals and communities to improve their health	36	32.1
Inform, educate, & empower people about health issues	36	32.1
Monitor health status to identify community health problems	36	32.1
Identify & analyze factors that influence health behaviors	36	32.1
Research for new innovative solutions to health problems	36	32.1
Facilitate partner relationship(s)	36	32.1
Address factors that affect implementation of intervention &/or prevention services	36	32.1
Communicate need for health education to priority populations and other stakeholders	36	32.1
Use assessment results to inform the planning process	35	31.3
Monitor implementation of health education plans and/or programs	35	31.3
Develop volunteer opportunities	35	31.3
Facilitate cooperation among stakeholders responsible for health education	35	31.3
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	34	30.4
Employ technology to communicate to priority populations	34	30.4
Incorporate media and technology in advocacy	33	29.5
Apply principles of cultural competence in selecting/designing strategies & interventions	33	29.5
Communicate findings to stakeholders	32	28.6
Identify priority populations	30	26.8
Interpret results of the evaluation & research	30	26.8
Mobilize community partnerships to identify & solve health problem	30	26.8
Comply with existing laws and regulations	30	26.8
Tailor messages to priority populations	29	25.9
Enforce laws and regulations that protect health and ensure safety	27	24.1
Identify potential partner(s)	24	21.4

Note. n = 112.

Table 13 identifies the low need training areas in KSAs of academically trained health education professionals. These responses included enforcing laws and regulations that protect health and ensure safety (39.3%); developing volunteer opportunities (35.7%); complying with existing laws and regulations (32.1%); identifying potential partners (29.5%); and both linking people to needed personal health services and assuring the provision of health care when otherwise unavailable as well as applying principles of cultural competence in selecting/designing strategies and interventions (26.8%).

Similarly, Table 14 shows the KSAs where no need was indicated from the participants. The areas that did not need additional training were complying with existing laws and regulations (8%); enforcing laws and regulations that protect health and ensure safety (7.1%); and linking people to needed personal health services and assure the provision of health care when otherwise unavailable (4.5%). Additionally, 3.6% of the participants indicated there were no needs in the KSA areas to identify priority populations, monitor health status to identify community health problems, identify existing and needed resources to conduct assessments, incorporate media and technology in advocacy, and develop volunteer opportunities.

Table 13

Low Need for Training in KSAs of Academically Trained Health Educators

Knowledge, Skills, and Activities (KSAs)	Low Need	
	n	%
Enforce laws and regulations that protect health and ensure safety	44	39.3
Develop volunteer opportunities	40	35.7
Comply with existing laws and regulations	36	32.1
Identify potential partner(s)	33	29.5
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	30	26.8
Apply principles of cultural competence in selecting/designing strategies & interventions	30	26.8
Identify priority populations	25	22.3
Facilitate partner relationship(s)	25	22.3
Facilitate cooperation among stakeholders responsible for health education	23	20.5
Engage in professional development activities	22	19.6
Employ technology to communicate to priority populations	22	19.6
Identify & analyze factors that enhance or compromise health	21	18.8
Identify existing data collection instruments	21	18.8
Communicate findings to stakeholders	21	18.8
Conduct searches of existing databases for specific health-related data	21	18.8
Research for new insights & innovative solutions to health problems	20	17.9
Facilitate collaborative efforts to achieve program goals	20	17.9
Develop a process for integrating health education into other programs	20	17.9
Diagnose and investigate health problems & health hazards in the community	20	17.9
Identify current and emerging issues that may influence health and health education	19	17.0
Tailor messages to priority populations	19	17.0
Mobilize community partnerships to identify & solve health problem	19	17.0
Assure a competent public health and personal health care workforce	19	17.0
Design instruments to collect data for evaluation & research	19	17.0
Interpret results of the evaluation & research	18	16.1
Analyze the opportunity for integrating health education into other programs	18	16.1

Knowledge, Skills, and Activities (KSAs)	Low Need	
	n	%
Use assessment results to inform the planning process	17	15.2
Use strategies to ensure cultural competence in implementing health education plans	17	15.2
Identify existing and needed resources to conduct assessments	17	15.2
Use data to support advocacy messages	17	15.2
Develop data collection instruments and methods	17	15.2
Determine the range of health education needed to achieve goals and objectives	17	15.2
Identify & prioritize health education needs	16	14.3
Integrate research designs, methods, and instruments into assessment plan	16	14.3
Develop plans for data collection, analysis, and interpretation	16	14.3
Address factors that affect implementation of intervention &/or prevention services	16	14.3
Identify & analyze factors that influence health behaviors	15	13.4
Monitor implementation of health education plans and/or programs	15	13.4
Communicate need for health education to priority populations and other stakeholders	15	13.4
Inform, educate, & empower people about health issues	14	12.5
Identify & analyze factors that influence health behaviors	14	12.5
Incorporate media and technology in advocacy	14	12.5
Monitor health status to identify community health problems	13	11.6
Collect & Integrate primary & secondary data	13	11.6
Identify desired outcomes utilizing the needs assessment results	12	10.7
Analyze & synthesize assessment finding	12	10.7
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	11	9.8
Use techniques that empower individuals and communities to improve their health	8	7.1

Note. n = 112.

Table 14

No Need for Training in KSAs of Academically Trained Health Educators

Knowledge, Skills, and Activities (KSAs)	No Need	
	n	%
Comply with existing laws and regulations	9	8.0
Enforce laws and regulations that protect health and ensure safety	8	7.1
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	5	4.5
Identify priority populations	4	3.6
Monitor health status to identify community health problems	4	3.6
Identify existing and needed resources to conduct assessments	4	3.6
Incorporate media and technology in advocacy	4	3.6
Develop volunteer opportunities	4	3.6
Identify & prioritize health education needs	3	2.7
Identify desired outcomes utilizing the needs assessment results	3	2.7
Identify existing data collection instruments	3	2.7
Identify potential partner(s)	3	2.7
Facilitate cooperation among stakeholders responsible for health education	3	2.7
Facilitate partner relationship(s)	3	2.7
Conduct searches of existing databases for specific health-related data	3	2.7
Develop a process for integrating health education into other programs	3	2.7
Diagnose and investigate health problems & health hazards in the community	3	2.7
Use assessment results to inform the planning process	2	1.8
Use strategies to ensure cultural competence in implementing health education plans	2	1.8
Tailor messages to priority populations	2	1.8
Identify & analyze factors that enhance or compromise health	2	1.8
Identify & analyze factors that influence health behaviors	2	1.8
Identify & analyze factors that influence health behaviors	2	1.8
Mobilize community partnerships to identify & solve health problem	2	1.8
Monitor implementation of health education plans and/or programs	2	1.8
Use data to support advocacy messages	2	1.8
Assure a competent public health and personal health care workforce	2	1.8
Collect & Integrate primary & secondary data	2	1.8
Develop plans for data collection, analysis, and interpretation	2	1.8
Engage in professional development activities	2	1.8

Knowledge, Skills, and Activities (KSAs)		
	n	%
Identify current and emerging issues that may influence health and health education	1	0.9
Inform, educate, & empower people about health issues	1	0.9
Integrate research designs, methods, and instruments into assessment plan	1	0.9
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	1	0.9
Facilitate collaborative efforts to achieve program goals	1	0.9
Analyze & synthesize assessment finding	1	0.9
Analyze the opportunity for integrating health education into other programs	1	0.9
Communicate findings to stakeholders	1	0.9
Communicate need for health education to priority populations and other stakeholders	1	0.9
Determine the range of health education needed to achieve goals and objectives	1	0.9
Develop data collection instruments and methods	1	0.9

Note. n = 112.

Percentages Testing for Research Question Three

The third research question asked participants who did not employ someone with the title Health Educator to identify what percentage of the public health workforce at their LHD/LHA is responsible for and/or delivers health education activities within their respective agencies as well as performing the work of health educators but without formal, academic health education training. They were also directed to select all personnel who performed these activities, which accounts for the percentages totaling more than 100% (see Table 15). The respondents reported that the following personnel carried out these activities, with the most prevalent categories resulting in: Public Health Nurses (59.4%), Health Directors (39.6%), *Other* (34.2%), Environment Health Specialists (32.1%), Nutritionists (27.3%), and Health Services Managers (17.1%).

As the *Other* category was an open-ended/fill-in option, responses included the following personnel: a) Case Workers; b) Social Workers; c) LVN/Public Health Nurse; d) Public Health Preparedness Coordinator; e) Lay Health Promoters; f) Tobacco Prevention Specialist; g) Special Projects Coordinator; h) Community Health Workers; i) Grant Coordinators; j) Assistant Health Agent/Clerk; k) Healthy Communities Coordinator; l) Specific and Other Program Staff; m) Chronic Disease Prevention Workers; n) PIO Working With Clerical Staff; and o) Contracts with Outside Agencies.

Table 15

Prevalence of Other Personnel Performing Activities of Health Education

	n	%
Public Health Nurse	111	59.4
Health Director	74	39.6
Other	64	34.2
Environment Health Specialists	60	32.1
Nutritionist	51	27.3
Health Services Manager	32	17.1
Administrative/Clerical Staff	27	14.4
Other Environmental Staff	22	11.8
Epidemiologist	17	9.1
No One	4	2.1

Note. n = 187.

Qualitative findings. Participants were asked about the reasons why they did not employ someone with the formal title of health educator. The answers included a lack of funding for the position (34.8%); other employees can perform the functions of a health educator (19.8%); *other* as an open-ended question to gain more insight (18.7%); limited staffing options (14.4%); cost cannot be justified based on potential return on investment

(11.8%); and the state health department conducts health education activities (4.3%) (see Table 16). The *other* qualitative themes included: a) staff is cross-trained and have duties/roles that include health education; b) not enough credentialed health educators in this region; c) not a focus at this time; d) employed health educators in the past, but lack of workload made the position unnecessary; e) health educator title is out-dated & restrictive to our scope of work; and f) feel experienced RNs have the education and experience necessary to conduct health education activities. One interesting item noted by four respondents was that they employed staff who were either CHES or MCHES, but did not have the “title” of health educator.

Table 16

Prevalence of Reasons a Health Educator is not Employed by LHD/LHA

	n	%
Lack of Funding for the Position	65	78.3
Other Employees can Perform The Functions Of A Health Educator	37	44.6
Other	35	42.2
Limited Staffing Options	27	32.5
Cost cannot be Justified based on Potential Return on Investment	22	26.5
State Health Department Conducts Health Education Activities	8	9.6

Note. n = 83. Answers include the 8 agencies where no one was conducting health education activities.

Percentages Testing for Research Question Four

The fourth and final research question made the inquiry of how these public health administrators/supervisors viewed the importance of and/or valued health education and related activities for LHD/LHAs as well as members of their communities. The respondents were asked to rate the importance of health education activities as:

a) very important; b) important; c) somewhat important; d) not important; and e) no opinion. Table 17 illustrates the importance for both LHD/LHAs that employ those with the title of health educator as well as those with other titles who carry out the duties/activities of health education. The participants with titled health educators indicated the importance of health education to their agency and community as: very important (68.8%); important (8.9%); and no opinion (23.2%). Categorically, no one selected somewhat important or not important. As for the respondents who employed others administering health education activities, they reported the value of these duties as: very important (60%); important (8%); somewhat important (2.7%); not important (1.3%); and no opinion (26.7%).

Table 17

Prevalence of Importance/Value of Health Education and Related Activities

Importance of Health Education	n	%
LHD/LHAs Employing Titled Health Educators		
Very Important	77	68.8
Important	10	8.9
Somewhat Important	0	0.0
Not Important	0	0.0
No Opinion	26	23.2
LHD/LHAs Employing Others Administering the Duties of Health Educators		
Very Important	45	60.0
Important	6	8.0
Somewhat Important	2	2.7
Not Important	1	1.3
No Opinion	20	26.7

Note. n = 187.

Hypothesis Testing for Hypothesis One

In addition to conducting prevalence testing for each of the four (4) research questions, the study tested two hypotheses as well. The first hypothesis explored the differences between the competency levels of academically trained health education professionals and other public health personnel administering health education and related activities. The structure of the questions combined overlapping elements of EPHS and NCHEC, when possible, with the remaining questions composed of an array of rudiment constructs from both tenets of EPHS and NCHEC. As previously denoted, this was a pilot study and though the original sample pool was large, the actual number of participants was small ($n = 187$). Therefore, the level of significance for this study was set at $p \leq .05$. Additionally, the Fisher's exact test was utilized to assess the exact probability that the chi-squared statistics were accurate due to the smaller sample size scores in different groups.

The competency levels of academically trained health educators and other public health personnel were rated by the respondents' confidence level in each area. Pearson's chi-squared cross tabulations were conducted to explore the differences between competency levels of academically trained health educators and other public health personnel performing health education and related activities. Of the 57 competency questions asked of participants, Table 18 shows that LHD/LHAs that employ academically trained health educators whose competency levels were ranked as highly competent were significantly different than LHD/LHAs who employed other personnel in the role of health educator who were ranked as not competent.

These competency areas included:

1. The ability to determine the range of health education needed to achieve goals and objectives: $X^2(1) = 5.86, p \leq .016$, Fisher's *exact test* = .028. Of these agencies, the LHD/LHAs that did not employ an academically trained health educator had a larger proportion of participants who were not competent (35.6%) than those agencies who employed an academically trained health educator (16.7%).
2. The skill to link people to needed personal health services and assure the provision of health care when otherwise unavailable: $X^2(1) = 6.49, p \leq .011$, Fisher's *exact test* = .019. Of the participating LHD/LHAs, those agencies that did not employ an academically trained health educator had a larger proportion of participants who were not competent (16.7%) than those agencies who employed an academically trained health educator (3.7%).
3. The ability to use strategies to ensure cultural competence in implementing health education plans: $X^2(1) = 5.30, p \leq .021$, Fisher's *exact test* = .030. Of the participating LHD/LHAs, those agencies that did not employ an academically trained health educator had a larger proportion of participants who were not competent (29.5%) than those agencies who employed an academically trained health educator (12.7%).

The results of this specific analysis was speculated to indicate more areas of importance than were found as significant differences. However, two areas which were closer to the threshold did include a few of the projected differences such as: a) the capability to facilitate cooperation among stakeholders responsible for health education and b) the aptitude to identify current and emerging issues that may influence health and health education.

Table 18

Prevalence and Chi-Squared Analysis of Competency Levels by Educational Training

Competencies	Employ Academically Trained Health Educator				Employ Other Public Health Personnel				χ^2	p
	Competent		Not competent		Competent		Not competent			
	n	%	n	%	n	%	n	%		
Address factors that affect implementation of intervention &/or prevention service	81	90.0	9	10.0	43	89.6	5	10.4	0.9385	1.0000
Advocate for health-related policies, regulations, laws, or rules	66	79.5	17	20.5	36	80.0	9	20.0	0.9484	1.0000
Analyze & synthesize assessment findings	60	72.3	23	27.7	34	70.8	14	29.2	0.8585	1.0000
Analyze an organization's culture in relationship to health education goals	66	75.0	22	25.0	33	70.2	14	29.8	0.5490	0.5477
Analyze factors that influence decision-makers	62	74.7	21	25.3	35	77.8	10	22.2	0.6978	0.8297
Analyze the opportunity for integrating health education into other programs	75	85.2	13	14.8	38	79.2	10	20.8	0.3676	0.4732
Apply appropriate methods for team development	72	81.8	16	18.2	36	75.0	12	25.0	0.3473	0.3795
Apply ethical principles in consultative relationships	76	91.6	7	8.4	41	83.7	8	16.3	0.1675	0.2552
Apply principles of cultural competence in selecting/designing strategies & interventions	70	81.4	16	18.6	35	74.5	12	25.5	0.3489	0.3787
Assess capacity of potential partner(s) to meet program goals	73	83.9	14	16.1	36	73.5	13	26.5	0.1429	0.1798
Assure a competent public health and personal health care workforce	60	79.0	16	21.1	36	80.0	9	20.0	0.8901	1.0000
Collect & Integrate primary & secondary data	59	72.0	23	28.1	32	74.4	11	25.6	0.7684	0.8347
Communicate findings to stakeholders	73	86.9	11	13.1	42	89.4	5	10.6	0.6804	0.7858
Communicate need for health education to priority populations and other stakeholders	75	87.2	11	12.8	37	80.4	9	19.6	0.3010	0.3176
Comply with existing laws and regulations	79	94.0	5	6.0	46	100.0	0	0.0	0.0915	0.1605

(Continued)

Competencies	Employ Academically Trained Health Educator				Employ Other Public Health Personnel				χ^2	p
	Competent		Not competent		Competent		Not competent			
	n	%	n	%	n	%	n	%		
Conduct searches of existing databases for specific health-related data	69	81.2	16	18.8	34	75.6	11	24.4	0.4523	0.4989
Convey health-related information to key stakeholders & priority populations	76	90.5	8	8.5	43	89.6	5	10.4	0.8685	1.0000
Demonstrate a wide range of training strategies	59	72.0	23	28.0	32	72.7	12	27.3	0.9261	1.0000
Design instruments to collect data for evaluation & research	45	54.9	37	45.1	27	62.8	16	37.2	0.3951	0.4490
Determine the range of health education needed to achieve goals and objectives	70	83.3	14	16.7	29	64.4	16	35.6	0.0155	0.0275
Develop a process for integrating health education into other programs	67	80.7	16	19.3	35	77.8	10	22.2	0.6925	0.8184
Develop a process for integrating health ed into other programs	67	81.7	15	18.3	38	84.4	7	15.6	0.6966	0.8088
Develop data collection instruments and methods	47	60.3	31	39.7	26	59.1	18	40.9	0.8997	1.0000
Develop plans for data collection, analysis, and interpretation	47	58.0	34	42.0	29	67.4	14	32.6	0.3055	0.3380
Develop volunteer opportunities	58	81.7	13	18.3	30	69.8	13	30.2	0.1414	0.1697
Diagnose and investigate health problems & health hazards in the community	59	81.9	13	18.1	36	76.6	11	23.4	0.4772	0.4923
Employ technology to communicate to priority populations	64	76.2	20	23.8	32	68.1	15	31.9	0.3146	0.4105
Enforce laws and regulations that protect health and ensure safety	61	87.1	9	12.9	38	84.4	7	15.6	0.6832	0.7843
Engage in professional development activities	80	95.2	4	4.8	44	89.8	5	10.2	0.2281	0.2887
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	57	72.1	22	27.8	33	70.2	14	29.8	0.8158	0.8405
Facilitate collaborative efforts to achieve program goals	80	95.2	4	4.8	43	89.6	5	10.4	0.2150	0.2847

(Continued)

Competencies	Employ Academically Trained Health Educator				Employ Other Public Health Personnel				χ^2	p
	Competent		Not competent		Competent		Not competent			
	n	%	n	%	n	%	n	%		
Facilitate professional growth of self & others	74	90.2	8	9.8	39	81.3	9	18.7	0.1421	0.1795
Facilitates collaboration and partnerships to ensure participation of key stakeholders	79	95.2	4	4.8	45	91.8	4	8.2	0.4366	0.4684
Facilitate cooperation among stakeholders responsible for health education	76	93.8	5	6.2	39	83.0	8	17.0	0.0502	0.0686
Facilitate partner relationship(s)	79	96.3	3	3.7	44	91.7	4	8.3	0.2544	0.4223
Identify & analyze factors that enhance or compromise health	64	79.0	17	21.0	40	85.1	7	14.9	0.3945	0.4846
Identify & analyze factors that influence health behaviors	68	82.9	14	17.1	36	78.3	10	21.7	0.5164	0.6376
Identify & prioritize health education needs	75	92.6	6	7.4	40	83.3	8	16.7	0.1022	0.1426
Identify current and emerging issues that may influence health and health education	69	87.3	10	12.7	34	73.9	12	26.1	0.0573	0.0866
Identify desired outcomes utilizing the needs assessment results	66	84.6	12	15.4	37	80.4	9	19.6	0.5488	0.6227
Identify existing and needed resources to conduct assessments	67	83.7	13	16.3	36	80.0	9	20.0	0.5972	0.6298
Identify existing data collection instruments	65	81.3	15	18.7	36	80.0	9	20.0	0.8648	1.0000
Implement training sessions and programs	77	91.7	7	8.3	39	84.8	7	15.2	0.2260	0.2473
Incorporate media and technology in advocacy	55	68.7	25	31.3	36	75.0	12	25.0	0.4502	0.5471
Inform, educate, & empower people about health issues	82	97.6	2	2.4	44	91.7	4	8.3	0.1143	0.1895
Integrate research designs, methods, and instruments into assessment plan	46	60.5	30	39.5	27	62.8	16	37.2	0.8075	0.8468
Interpret results of the evaluation & research	54	71.1	22	28.9	34	77.3	10	22.7	0.4578	0.5248

(Continued)

Competencies	Employ Academically Trained Health Educator				Employ Other Public Health Personnel				χ^2	p
	Competent		Not competent		Competent		Not competent			
	n	%	n	%	n	%	n	%		
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	78	96.3	3	3.7	40	83.3	8	16.7	0.0108	0.0189
Mobilize community partnerships to identify & solve health problems	69	84.2	13	15.8	40	83.3	8	16.7	0.9033	1.0000
Monitor health status to identify community health problems	65	85.5	11	14.5	40	83.3	8	16.7	0.7412	0.8005
Monitor implementation of health education plans and/or programs	71	87.7	10	12.3	39	86.7	6	13.3	0.8732	1.0000
Research for new insights & innovative solutions to health problems	51	68.9	23	31.1	33	73.3	12	26.7	0.6083	0.6811
Tailor messages to priority populations	66	82.5	14	17.5	40	85.1	7	14.9	0.7027	0.8074
Use assessment results to inform the planning process	68	88.3	9	11.7	37	77.1	11	22.9	0.0958	0.1318
Use data to support advocacy messages	69	88.5	9	11.5	36	76.6	11	23.4	0.0796	0.1289
Use strategies to ensure cultural competence in implementing health education plans	69	87.3	10	12.7	31	70.5	13	29.5	0.0213	0.0296
Use techniques that empower individuals and communities to improve their health	70	86.4	11	13.6	38	80.9	9	19.1	0.4029	0.4532

Note. n = 187.

Hypothesis Testing for Hypothesis Two

The second hypothesis examined the variance between the training needs of KSAs among academically trained health education professionals and other public health personnel administering health education and related activities. As previously stated with the competency levels, the structure of the KSA questions combined overlapping elements of EPHS and NCHEC, when possible, with the remaining questions composed of an array of core constructs from both tenets of EPHS and NCHEC. Also stated previously, this was a pilot study and though the original sample pool was large, the actual number of participants was small ($n = 187$). Therefore, findings with a *p value* $\leq .05$ were considered significant. Additionally, the Fisher's exact test was utilized to assess the exact probability that the chi-squared statistics were accurate due to the smaller sample size scores in different groups.

Pearson's chi-squared cross tabulations were conducted to explore for differences between KSA training needs of academically trained health educators and other public health personnel performing health education and related activities. The respondents were instructed to rank the needs of KSAs from "high need" to "no need" on a 4 point scale. Out of the 48 questions asked of participants, Table 19 illustrates those LHD/LHAs that employ academically trained health educators had significant differences in KSAs and training needs than LHD/LHAs who employed other personnel in the role of health educator.

The following KSA areas of need identified were:

- * KSAs needed to employ technology to communicate to priority populations: $X^2(3) = 9.3126, p \leq .025, Fisher's exact test = .024$. Of the participating LHD/LHAs, those agencies that employ an academically trained health educator had a larger proportion of participants who had training needs in KSAs, from high need to no need respectively, (HN: 41.7%; MN: 35.4%; LN: 22.9%; NN: 0%) than those agencies who did not employ an academically trained health educator (HN: 34.3%; MN: 46.3%; LN: 13.4%; NN: 6 %).
- * The necessary KSAs to identify potential partner(s): $X^2(3) = 9.77, p \leq .021, Fisher's exact test = .022$. Of these agencies, the LHD/LHAs that did not employ an academically trained health educator had a larger proportion of participants who had training needs in KSAs, from high need to no need respectively, (HN: 35.5%; MN: 25.8%; LN: 35.5%; NN: 3.2 %) than those agencies who employed an academically trained health educator (HN: 23.8%; MN: 41.3%; LN: 23.8%; NN: 11.1%).
- * KSAs to be more adept at interpreting results of evaluation and research: $X^2(3) = 8.33, p \leq .040, Fisher's exact test = .039$. Of the participating LHD/LHAs, those agencies that did not employ an academically trained health educator had a larger proportion of participants who had training needs in KSAs, from high need to no need respectively, (HN: 33.3%; MN: 45%; LN: 16.7%; NN: 5 %) than those

agencies who employed an academically trained health educator (HN: 48.4%; MN: 32.3%; LN: 19.4%; NN: 0%).

The expected outcomes of this question set for this study was projected to yield more than the 3 significant relationships identified. Areas that were predicted by the researcher to be significant and were close to, but did not emanate the criteria ($p \leq .05$) included areas such as tailoring messages and ensuring cultural competence in implementing health education plans as well as conveying the need for health education to stakeholders. Additional areas included identifying health issues and addressing these health behaviors by prioritizing and implementing health education needs and activities as well as evaluating the outcomes of priority populations. Due to the small cell counts, primarily in the no need category, these KSAs did not yield significant results.

Table 19

Prevalence and Chi-Squared Analysis of KSAs by Educational Training

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Address factors that affect implementation of intervention &/or prevention services	45	46.4	36	37.1	16	16.5	0	0.0	28	39.4	28	39.4	14	19.7	1	1.4	0.5480	0.5852
Analyze & synthesize assessment findings	46	46.9	39	39.8	12	12.2	1	1.0	26	38.2	27	39.7	14	20.6	1	1.5	0.4658	0.4308
Analyze the opportunity for integrating health education into other programs	41	42.3	37	38.1	18	18.6	1	1.0	25	35.7	22	31.4	22	31.4	1	1.4	0.2807	0.2294
Apply principles of cultural competence in selecting/designing strategies & interventions	34	35.1	33	34.0	30	30.9	0	0.0	26	36.6	25	35.2	17	23.9	3	4.2	0.1825	0.2164

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Assure a competent public health and personal health care workforce	33	34.0	43	44.3	19	19.6	2	2.1	24	33.8	31	43.7	12	16.9	4	5.6	0.6527	0.6911
Collect & Integrate primary & secondary data	35	36.1	47	48.4	13	13.4	2	2.1	21	30.0	36	51.4	11	15.7	2	2.9	0.8543	0.8358
Communicate findings to stakeholders	43	44.3	32	33.0	21	21.6	1	1.0	28	40.0	27	38.6	13	18.6	2	2.9	0.6865	0.6888
Communicate need for health education to priority populations and other stakeholders	45	46.4	36	37.1	15	15.5	1	1.0	30	42.2	23	32.4	16	22.5	2	2.8	0.5202	0.5158
Comply with existing laws and regulations	22	22.7	30	30.9	36	37.1	9	9.3	24	33.8	17	23.9	22	31.0	8	11.3	0.3657	0.3673
Conduct searches of existing databases for specific health-related data	30	30.6	44	44.9	21	21.4	3	3.1	16	22.9	34	48.6	18	25.7	2	2.9	0.7186	0.6887

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Design instruments to collect data for evaluation & research	37	37.8	40	40.8	19	19.4	2	2.0	24	33.8	28	39.4	16	22.5	3	4.2	0.7871	0.7848
Determine the range of health education needed to achieve goals and objectives	35	35.7	45	45.9	17	17.3	1	1.0	28	39.4	30	42.2	12	16.9	1	1.4	0.9534	0.9289
Develop a process for integrating health education into other programs	30	31.2	43	44.8	20	20.8	3	3.1	25	36.8	24	35.3	15	22.1	4	5.9	0.5772	0.5813
Develop data collection instruments and methods	31	32.3	47	49.0	17	17.7	1	1.0	21	30.9	32	47.1	11	16.2	4	5.6	0.3663	0.4065
Develop plans for data collection, analysis, and interpretation	41	42.7	37	38.5	16	16.7	2	2.1	24	35.3	29	42.6	11	16.2	4	5.9	0.5135	0.5138
Develop volunteer opportunities	17	17.7	35	36.5	40	41.7	4	4.2	19	27.9	28	41.2	18	26.5	3	4.4	0.1923	0.1827

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Diagnose and investigate health problems & health hazards in the community	25	26.0	48	50.0	20	20.8	3	3.1	20	29.8	23	34.3	18	26.9	6	9.0	0.1400	0.1379
Employ technology to communicate to priority populations	40	41.7	34	35.4	22	22.9	0	0.0	23	34.3	31	46.3	9	13.4	4	6.0	0.0254	0.0242
Enforce laws and regulations that protect health and ensure safety	17	17.7	27	28.1	44	45.8	8	8.3	17	25.4	20	29.9	21	31.3	9	13.4	0.2393	0.2400
Engage in professional development activities	27	28.1	45	46.9	22	22.9	2	2.1	27	40.3	25	37.3	11	16.4	4	6.0	0.1683	0.1755
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	46	48.4	37	39.0	11	11.6	1	1.1	30	44.8	25	37.3	10	14.9	2	3.0	0.7362	0.7628

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Facilitate collaborative efforts to achieve program goals	34	35.4	41	42.7	20	20.8	1	1.0	23	34.3	25	37.3	15	22.4	4	6.0	0.3252	0.3649
Facilitate cooperation among stakeholders responsible for health education	35	36.5	35	36.5	23	24.0	3	3.1	25	37.9	24	36.4	12	18.2	5	7.6	0.5331	0.5444
Facilitate partner relationship(s)	32	33.3	36	37.5	25	26.0	3	3.1	25	37.3	23	34.3	13	19.4	6	9.0	0.3255	0.3430
Identify & analyze factors that enhance or compromise health	32	34.4	38	40.9	21	22.6	2	2.2	19	30.2	28	44.4	11	17.5	5	7.9	0.3076	0.3183
Identify & analyze factors that influence health behaviors	40	43.0	37	39.8	14	15.1	2	2.2	23	36.5	24	38.1	11	17.5	5	7.9	0.3396	0.3557
Identify & prioritize health education needs	35	37.6	39	41.9	16	17.2	3	3.2	21	33.3	26	41.3	12	19.0	4	6.4	0.7807	0.7649

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								X ²	p
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Identify current and emerging issues that may influence health and health education	35	38.0	37	40.2	19	20.7	1	1.1	24	38.1	26	41.3	9	14.3	4	6.4	0.2551	0.2867
Identify desired outcomes utilizing the needs assessment results	38	40.9	40	43.0	12	12.9	3	3.2	18	28.6	32	50.8	9	14.3	4	6.4	0.4005	0.3967
Identify existing and needed resources to conduct assessments	30	32.3	42	45.2	17	18.3	4	4.3	17	27.0	30	47.6	12	19.1	4	6.4	0.8697	0.8660
Identify existing data collection instruments	27	29.0	42	45.2	21	22.6	3	3.2	16	25.4	29	46.0	12	19.1	6	9.5	0.3931	0.4195
Identify & analyze factors that influence health behaviors	40	43.0	36	38.7	15	16.1	2	2.2	21	33.3	26	41.4	12	19.1	4	6.4	0.4125	0.4099
Identify potential partner(s)	33	35.5	24	25.8	33	35.5	3	3.2	15	23.8	26	41.3	15	23.8	7	11.1	0.0206	0.0218

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Identify priority populations	32	35.2	30	33.0	25	27.5	4	4.4	17	27.0	26	41.3	14	22.2	6	9.5	0.3337	0.3381
Incorporate media and technology in advocacy	42	45.2	33	35.5	14	15.1	4	4.3	17	27.4	29	46.8	13	21.0	3	4.8	0.1694	0.1596
Inform, educate, & empower people about health issues	41	44.6	36	39.1	14	15.2	1	1.1	29	46.0	22	34.9	9	14.3	3	4.8	0.5371	0.5818
Integrate research designs, methods, and instruments into assessment plan	37	39.8	39	41.9	16	17.2	1	1.1	18	29.0	26	41.9	15	24.2	3	4.8	0.2445	0.2393
Interpret results of the evaluation & research	45	48.4	30	32.3	18	19.4	0	0.0	20	33.3	27	45.0	10	16.7	3	5.0	0.0397	0.0381
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	24	25.8	34	36.6	30	32.3	5	5.4	21	33.9	23	37.1	15	24.2	3	4.8	0.6391	0.6478

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Mobilize community partnerships to identify & solve health problem	42	45.2	30	32.3	19	20.4	2	2.2	25	40.3	24	38.7	11	17.7	2	3.2	0.8130	0.7989
Monitor health status to identify community health problems	39	42.4	36	39.1	13	14.1	4	4.4	21	33.9	26	41.9	12	19.4	3	4.8	0.7044	0.6862
Monitor implementation of health education plans & programs	41	44.1	35	37.6	15	16.1	2	2.2	21	34.4	29	47.5	9	14.8	2	3.3	0.5831	0.5849
Research for new insights & innovative solutions to health problems	37	39.8	36	38.7	20	21.5	0	0.0	26	41.9	20	32.3	15	24.2	1	1.6	0.5539	0.6111
Tailor messages to priority populations	42	45.7	29	31.5	19	20.7	2	2.2	29	46.8	24	38.7	8	12.9	1	1.6	0.5946	0.5964
Use assessment results to inform the planning process	37	40.7	35	38.5	17	18.7	2	2.2	18	29.0	31	50.0	11	17.7	2	3.2	0.4416	0.4300

(Continued)

KSAs	Employ Academically Trained Health Educator								Employ Other Public Health Personnel								χ^2	<i>p</i>
	High Need		Moderate Need		Low Need		No Need		High Need		Moderate Need		Low Need		No Need			
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Use data to support advocacy messages	35	37.6	39	41.9	17	18.3	2	2.2	15	24.2	34	54.8	12	19.4	1	1.6	0.3238	0.2926
Use strategies to ensure cultural competence in implementing health education plans	35	38.5	37	40.7	17	18.7	2	2.2	22	35.5	26	41.9	11	17.7	3	4.8	0.8237	0.8483
Use techniques that empower individuals and communities to improve their health	47	51.7	36	39.6	8	8.8	0	0.0	29	46.8	23	37.1	8	12.9	2	3.2	0.2878	0.3247

Note. *n* = 187.

Summary of Results

For this study, the researcher used primary data collected from administrators of LHD/LHAs listed in the 2013 NACCHO Index of Local Public Health Departments in the US to examine the prevalence of the population size served, employment practices and factors, and education and credential factors. Additionally, the prevalence of the value of employing health educators in addition to reasons for not employing health educators was explored. The researcher also collected qualitative data to garner more detailed information on employment factors. The prevalence of training needs in KSAs as well as the competency levels of academically trained health educators were determined, and the correlates of academically trained health educators versus other public health personnel performing health education activities were examined.

Descriptive analyses of employment practice showed that about two-thirds of LHD/LHAs employed someone with the title of health educator. All titled health educators possessed some type of education and/or credentials with almost one-quarter (25%) being licensed RNs. As far as additional other titled personnel administering health education within agencies that employed health educators, over 27% utilized RN/PHNs and almost 21% used Health Directors. The largest majority of LHD/LHAs who did not employ titled health educators have RN/PHNs (33.2%) performing health education activities.

Approximately one-third of all responding LHD/LHAs served four main sizes of populations, regardless of whether they had titled health educators: 10,000-24,999 (25%); 25,000-49,999 (28%); 50,000-99,999 (30%); and 100,000-249,999 (28%).

Additionally, close to one-third of respondents were located in the Midwestern geographic region (32%) of the US with almost equal number of respondents (about one-fourth) being located in the Northeastern (24%), Southern (22%), and Western regions (22%). Regarding the prevalence of the number of health educators employed with each agency and their length of employment, slightly over one-third employed one health educator while almost one-half had been employed for 15 years or longer.

In this study, the vast majority of academically trained health educators were competent at informing, educating, and empowering people about health issues as well as facilitating partnerships and linking people to needed health services. In addition, they possessed the ability to engage in professional development activities, facilitate collaborative efforts to achieve program goals, and foster collaborative efforts to achieve program goals and ensure participation of key informants. Almost half were lacking competence at developing plans for data collection, analysis, and interpretation, while a slightly smaller proportion were lacking the ability to effectively design data collection instruments for evaluation and research.

Prevalence testing of the level of needs (“high” to “none”) for training in KSAs showed that 42% had high needs to have the ability to use techniques that empower individuals and communities to improve their health, while 41.1% had high needs for evaluating effectiveness, accessibility, and quality of personal and/or population-based

services as well as interpreting results of evaluation and research. As for moderate needs, 42.9% needed training for diagnosing and investigating health problems and health hazards in the community, while 42% needed KSAs in developing data collection instruments and methods, and collecting and integrating primary and secondary data. The prevalence for low training needs showed that 39.3% required additional training in enforcing laws and regulations that protect health and ensure safety, and 35.7% needed to work on developing volunteer opportunities. Additionally, 8% of KSAs where no additional training was needed included complying with existing laws and regulations and enforcing laws and regulations that protect health and ensure safety (7.1%).

LHD/LHAs who did not employ a titled health educator but utilized other public health professionals' revealed almost two-thirds of RN/PHNs carried out health education activities. Almost 40% of health education activities were delivered by Health Directors, followed by one-third of health education activities conducted by Environment Health Specialists and others, which included 15 different classifications (see Table 15). Over one-third of LHD/LHAs who did not employ someone with the title of health educator lacked funds for the position, while a little under a 20% had other employees who can carry out the duties of a health educator. Other reasons (over 16%), for not employing a titled health educator included staff being cross-trained, not a focus at this time, title is out-dated and restrictive, and RNs have the education and experience to perform these functions.

Prevalence testing of the importance of health education and relative activities as perceived by the respondents showed that the majority of those employing a titled health educator felt that position was very important for their agency and population served. Of those employing other public health personnel delivering health education, almost two-thirds saw these activities as very important with over one-fourth having no opinion.

In addition to prevalence testing, this study also explored the significant differences between the competency levels and KSA training needs of academically trained health educators and other public health personnel administering health education and related activities. Some statistically significant variance was evident with LHD/LHAs who employ academically trained health educators with competency levels ranked as highly competent and LHD/LHAs who employed other personnel in the role of health educator who were ranked as not competent.

The significant correlations included: a) the ability to determine the range of health education needed to achieve goals and objectives, b) skills to link people to needed personal health services and assure the provision of health care when otherwise unavailable, c) and the ability to use strategies to ensure cultural competence in implementing health education plans.

A few significant differences were found for those LHD/LHAs who employ academically trained health educators and their relevant KSAs and training needs and LHD/LHAs who employed other personnel in the role of health educator with greater needs. The three significant variances included KSAs needed to: a) employ technology

to communicate to priority populations, b) identify potential partner(s), and c) interpret results of evaluation & research.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

This chapter presents a discussion of the summary as well as the conclusion for this research study. Research questions are examined, including the rejection or acceptance of the null hypotheses, and implications for the field of health education are discussed. Study limitations and recommendations for future are also addressed.

Summary

The purpose of this research study was to measure the competency levels of currently employed, academically trained health educators by surveying employing supervisors or administrators of local health departments/local health agencies (LHD/LHAs) to determine which competencies (knowledge, skills, and attitudes/attributes [KSAs]) are being met and not being met by professional public health educators.

Major areas of the survey included: (1) soliciting information from the respondents about their perception of the competency levels of health educators; (2) hiring and employment practices of health educators; (3) understanding what activities are performed by and who performs the work of health education in their agencies; (4) deficiencies in the KSAs of health educators in the workforce; and (5) perceived value of employing academically trained health educators.

The sample population consisted of 187 LHD/LHAs within the United States. Additionally, eight participants indicated there was no one performing health education activities in their organization. Therefore, they were not included in the quantitative statistical analysis of the results. However, they were included in the qualitative portion as they answered questions pertaining to why no one was conducting health education activities and/or what factors hindered these activities within their organizations.

The demographic distribution of participating LHD/LHAs by populations served by titled health educators included three main groupings: 25,000-49,999 (14%), 50,000-99,999 (18%), and 100,000-249,999 (18%). As for those agencies without a titled health educator, the distribution of population serviced was <10,000 (15%), 10,000-24,999 (18%), 25,000-49,999 (14%), and 50,000-99,999 (12%). In this study, the prevalence of US geographic regions showed a larger percentage from the Midwestern region (32%), followed almost equally by the Northeast region (24%), the Southern region (22%), and the Western region (22%).

This research study involved the collection of primary data from a national web-based survey, constructed by the researcher as a pilot study to explore one collective set of employers of health educators. Descriptive statistics were calculated to describe the basic demographics of the sample population, including stratification of respondents by agency size and jurisdiction/region. Other results were expressed using mean values and percentages for the number of titled health educators, length of time employed, titles of others performing health education activities, as well as the importance of health education at each LHA/LHD.

Pearson's Chi-squared analyses were conducted for the KSA questions, and characteristics of both the NCHEC competencies and the 10 EPHS to assess the differences between competencies and KSAs of academically trained health educators and other public health professionals conducting health education. Fisher's exact test was utilized to assess the exact probability that the Chi-squared statistics were accurate due to the smaller sample size scores in different groups. Mastery scores were described categorically from competent to not competent, while qualitative analysis was conducted to examine reasons given for not employing a health educator and/or not conducting health education activities.

Conclusion

The first research question in this study asked the respondents to rate the competency levels of core public health activities that academically trained health education professionals possess. Prevalence testing of competency levels showed that participants identified health educators as being most proficient at informing, educating, and empowering people about health issues (73%); addressing factors that affect implementation of intervention and/or prevention services (72%); engaging in professional development activities and facilitating collaborative efforts to achieve program goals (71%); and knowledgeable at facilitating partnerships, facilitating collaboration and partnerships to ensure participation of key stakeholders, linking people to needed health services, and complying with laws and regulations (70%). Areas where health educators were least effective included designing data collection instruments for evaluation and research (33%); developing plans for data collection, analysis, and

interpretation (30%); designing data collection instruments and methods (28%); and integrating research designs, methods, and instruments into assessment plans (27%).

The second research question asked participants to rank the need for training in KSA levels of core public health activities of academically trained health education professionals. The most prevailing constructs that were identified by participants in the “high need” category were using techniques that empower individuals and communities to improve their health (42%); evaluating effectiveness, accessibility, and quality of personal and/or population-based services as well as analyzing and synthesizing assessment findings (41%); interpreting the results of evaluation and research, and addressing factors that affect implementation of intervention and/or prevention services, and communicating the need for health education to priority populations and other stakeholders (40%).

Prevalence rates of “moderate needs” for KSAs of academically trained health education professionals included being able to diagnose and investigate health problems and health hazards in the community (43%) and developing data collection instruments and methods, as well as collecting and integrating primary and secondary data (42%). Additionally, “low need” training areas included enforcing laws and regulations that protect health and ensure safety (39%), developing volunteer opportunities (36%), and complying with existing laws and regulations (32%). Lastly, the areas with “no need” for additional training were complying with existing laws and regulations (8%), enforcing laws and regulations that protect health and ensure safety (7%), and linking people to

needed personal health services and assuring the provision of health care when otherwise unavailable (4.5%).

The third research question asked participants what percentage of their public health workforce is responsible for and conducts health education activities without formal health education training. The most prevalent persons carrying out these duties were RN/PHNs (59%), Health Directors (40%), *Others* (34%), Environment Health Specialists (32%), Nutritionists (27%), and Health Services Managers (17%). As the *Other* category was an open-ended/fill-in option, responses included the following personnel: (a) Case Workers; (b) Social Workers; (c) LVN/Public Health Nurse; (d) Public Health Preparedness Coordinator; (e) Lay Health Promoters; (f) Tobacco Prevention Specialist; (g) Special Projects Coordinator; h) Community Health Workers; (i) Grant Coordinators; (j) Assistant Health Agent/Clerk; (k) Healthy Communities Coordinator; (l) specific and other program staff; (m) Chronic Disease Prevention Workers; (n) PIO Working With Clerical Staff; (o) contracts with outside agencies; (p) WIC Home Economists; (q) Grant Coordinators; (r) Dental Hygienists; (s) interns; and (t) other staff.

The fourth research question asked respondents how they viewed the importance of and/or valued health education and related activities for their LHD/LHAs as well as members of their communities. Participants with titled health educators indicated the importance of health education to their agency and community as: very important (69%), important (9%), and no opinion (23%). Those who employed others administering health

education activities reported the value of these duties as: very important (60%); important (8%); somewhat important (3%); not important (1%); and no opinion (27%).

Participants were asked why they did not employ someone with the formal title of health educator. Prevalence testing indicated a lack of funding for the position (35%), other employees can perform the functions of a health educator (20%), other as an open-ended qualitative question (19%), and limited staffing options (14%). The open-ended question revealed additional insight into the basis for not employing a titled health educator. The theme most mentioned by the participants was that their staff are cross-trained and have duties/roles that include health education.

The first hypothesis explored whether significant relationships existed between the competency levels of academically trained health educators and other public health personnel performing health education and related activities as rated by the respondents' confidence level in each area. Of the 57 competency questions rated by the participants, only three (3) revealed significant associations as noted in Table 20. Agencies that did not employ academically trained health educators had a larger proportion of participants who were not competent than those agencies who employed an academically trained health educator with significant associations in: (a) the ability to determine the range of health education needed to achieve goals and objectives, (b) the skills to link people to needed personal health services and assure the provision of health care when otherwise unavailable, and (c) the ability to use strategies to ensure cultural competence in implementing health education plans.

Table 20

Conclusion of Results for Hypothesis One

Hypothesis One: There are no statistically significant differences in the levels of competencies between academically trained health educators and other public health personnel performing health education.

Address factors that affect implementation of intervention &/or prevention service	Null Hypothesis Accepted
Advocate for health-related policies, regulations, laws, or rules	Null Hypothesis Accepted
Analyze & synthesize assessment findings	Null Hypothesis Accepted
Analyze an organization's culture in relationship to health education goals	Null Hypothesis Accepted
Analyze factors that influence decision-makers	Null Hypothesis Accepted
Analyze the opportunity for integrating health education into other programs	Null Hypothesis Accepted
Apply appropriate methods for team development	Null Hypothesis Accepted
Apply ethical principles in consultative relationships	Null Hypothesis Accepted
Apply principles of cultural competence in selecting/designing strategies & interventions	Null Hypothesis Accepted
Assess capacity of potential partner(s) to meet program goals	Null Hypothesis Accepted
Assure a competent public health and personal health care workforce	Null Hypothesis Accepted
Collect & Integrate primary & secondary data	Null Hypothesis Accepted
Communicate findings to stakeholders	Null Hypothesis Accepted
Communicate need for health education to priority populations and other stakeholders	Null Hypothesis Accepted
Comply with existing laws and regulations	Null Hypothesis Accepted
Conduct searches of existing databases for specific health-related data	Null Hypothesis Accepted
Convey health-related information to key stakeholders & priority populations	Null Hypothesis Accepted

Hypothesis One: There are no statistically significant differences in the levels of competencies between academically trained health educators and other public health personnel performing health education.

Demonstrate a wide range of training strategies	Null Hypothesis Accepted
Design instruments to collect data for evaluation & research	Null Hypothesis Accepted
Determine the range of health education needed to achieve goals and objectives	Null Hypothesis Rejected
Develop a process for integrating health education into other programs	Null Hypothesis Accepted
Develop a process for integrating health education into other programs	Null Hypothesis Accepted
Develop data collection instruments and methods	Null Hypothesis Accepted
Develop plans for data collection, analysis, and interpretation	Null Hypothesis Accepted
Develop volunteer opportunities	Null Hypothesis Accepted
Diagnose and investigate health problems & health hazards in the community	Null Hypothesis Accepted
Employ technology to communicate to priority populations	Null Hypothesis Accepted
Enforce laws and regulations that protect health and ensure safety	Null Hypothesis Accepted
Engage in professional development activities	Null Hypothesis Accepted
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	Null Hypothesis Accepted
Facilitate collaborative efforts to achieve program goals	Null Hypothesis Accepted
Facilitate professional growth of self & others	Null Hypothesis Accepted
Facilitates collaboration and partnerships to ensure participation of key stakeholders	Null Hypothesis Accepted
Facilitate cooperation among stakeholders responsible for health education	Null Hypothesis Accepted
Facilitate partner relationship(s)	Null Hypothesis Accepted
Identify & analyze factors that enhance or compromise health	Null Hypothesis Accepted

Hypothesis One: There are no statistically significant differences in the levels of competencies between academically trained health educators and other public health personnel performing health education.

Identify & analyze factors that influence health behaviors	Null Hypothesis Accepted
Identify & prioritize health education needs	Null Hypothesis Accepted
Identify current and emerging issues that may influence health and health education	Null Hypothesis Accepted
Identify desired outcomes utilizing the needs assessment results	Null Hypothesis Accepted
Identify existing and needed resources to conduct assessments	Null Hypothesis Accepted
Identify existing data collection instruments	Null Hypothesis Accepted
Implement training sessions and programs	Null Hypothesis Accepted
Incorporate media and technology in advocacy	Null Hypothesis Accepted
Inform, educate, & empower people about health issues	Null Hypothesis Accepted
Inform, educate, & empower people about health issues	Null Hypothesis Accepted
Integrate research designs, methods, and instruments into assessment plan	Null Hypothesis Accepted
Interpret results of the evaluation & research	Null Hypothesis Accepted
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	Null Hypothesis Rejected
Mobilize community partnerships to identify & solve health problems	Null Hypothesis Accepted
Monitor health status to identify community health problems	Null Hypothesis Accepted
Monitor implementation of health education plans and/or programs	Null Hypothesis Accepted
Research for new insights & innovative solutions to health problems	Null Hypothesis Accepted
Tailor messages to priority populations	Null Hypothesis Accepted
Use assessment results to inform the planning process	Null Hypothesis Accepted
Use data to support advocacy messages	Null Hypothesis Accepted

Hypothesis One: There are no statistically significant differences in the levels of competencies between academically trained health educators and other public health personnel performing health education.

Use strategies to ensure cultural competence in implementing health education plans	Null Hypothesis Rejected
Use techniques that empower individuals and communities to improve their health	Null Hypothesis Accepted

Note: The null hypothesis was rejected if $p < .05$.

The second hypothesis investigated if there were significant differences between the training needs of KSAs in academically trained health education professionals and other public health personnel administering health education and related activities. Out of the 48 questions, LHD/LHAs that did not employ academically trained health educators had a larger proportion of participants with greater KSA needs. As shown in Table 21, the significant associations were: (a) KSAs needed to employ technology to communicate to priority populations; (b) KSAs to identify potential partner(s); and (c) KSAs to be more adept at interpreting results of evaluation & research.

Table 21

Conclusion of Results for Hypothesis Two

Hypothesis Two: There are no statistically significant differences in KSAs between academically trained health educators and other public health personnel performing health education.

Address factors that affect implementation of intervention &/or prevention services	Null Hypothesis Accepted
Analyze & synthesize assessment findings	Null Hypothesis Accepted
Analyze the opportunity for integrating health education into other programs	Null Hypothesis Accepted

Hypothesis Two: There are no statistically significant differences in KSAs between academically trained health educators and other public health personnel performing health education.

Apply principles of cultural competence in selecting/designing strategies & interventions	Null Hypothesis Accepted
Assure a competent public health and personal health care workforce	Null Hypothesis Accepted
Collect & Integrate primary & secondary data	Null Hypothesis Accepted
Communicate findings to stakeholders	Null Hypothesis Accepted
Communicate need for health education to priority populations and other stakeholders	Null Hypothesis Accepted
Comply with existing laws and regulations	Null Hypothesis Accepted
Conduct searches of existing databases for specific health-related data	Null Hypothesis Accepted
Design instruments to collect data for evaluation & research	Null Hypothesis Accepted
Determine the range of health education needed to achieve goals and objectives	Null Hypothesis Accepted
Develop a process for integrating health education into other programs	Null Hypothesis Accepted
Develop data collection instruments and methods	Null Hypothesis Accepted
Develop plans for data collection, analysis, and interpretation	Null Hypothesis Accepted
Develop volunteer opportunities	Null Hypothesis Accepted
Diagnose and investigate health problems & health hazards in the community	Null Hypothesis Accepted
Employ technology to communicate to priority populations	Null Hypothesis Rejected
Enforce laws and regulations that protect health and ensure safety	Null Hypothesis Accepted
Engage in professional development activities	Null Hypothesis Accepted
Evaluate effectiveness, accessibility, & quality of personal &/or population-based services	Null Hypothesis Accepted
Facilitate collaborative efforts to achieve program goals	Null Hypothesis Accepted

Hypothesis Two: There are no statistically significant differences in KSAs between academically trained health educators and other public health personnel performing health education.

Facilitate cooperation among stakeholders responsible for health education	Null Hypothesis Accepted
Facilitate partner relationship(s)	Null Hypothesis Accepted
Identify & analyze factors that enhance or compromise health	Null Hypothesis Accepted
Identify & analyze factors that influence health behaviors	Null Hypothesis Accepted
Identify & prioritize health education needs	Null Hypothesis Accepted
Identify current and emerging issues that may influence health and health education	Null Hypothesis Accepted
Identify desired outcomes utilizing the needs assessment results	Null Hypothesis Accepted
Identify existing and needed resources to conduct assessments	Null Hypothesis Accepted
Identify existing data collection instruments	Null Hypothesis Accepted
Identify & analyze factors that influence health behaviors	Null Hypothesis Accepted
Identify potential partner(s)	Null Hypothesis Rejected
Identify priority populations	Null Hypothesis Accepted
Incorporate media and technology in advocacy	Null Hypothesis Accepted
Inform, educate, & empower people about health issues	Null Hypothesis Accepted
Integrate research designs, methods, and instruments into assessment plan	Null Hypothesis Accepted
Interpret results of the evaluation & research	Null Hypothesis Rejected
Link people to needed personal health services & assure the provision of health care when otherwise unavailable	Null Hypothesis Accepted
Mobilize community partnerships to identify & solve health problem	Null Hypothesis Accepted
Monitor health status to identify community health problems	Null Hypothesis Accepted

Hypothesis Two: There are no statistically significant differences in KSAs between academically trained health educators and other public health personnel performing health education.

Monitor implementation of health education plans and/or programs	Null Hypothesis Accepted
Research for new insights & innovative solutions to health problems	Null Hypothesis Accepted
Tailor messages to priority populations	Null Hypothesis Accepted
Use assessment results to inform the planning process	Null Hypothesis Accepted
Use data to support advocacy messages	Null Hypothesis Accepted
Use strategies to ensure cultural competence in implementing health education plans	Null Hypothesis Accepted
Use techniques that empower individuals and communities to improve their health	Null Hypothesis Accepted

Note: The null hypothesis was rejected if $p < .05$.

Discussion

The analysis and results of this current study and the relation to employment practices and perceptions of health educators in a public health practice setting provide insight and implications that can help shape competencies in academic curriculum as well as address current needs in the public health workforce. As this was a pilot study, the intent was to provide a snapshot of how administrators/supervisors of public health educators perceive the educators' competency levels, KSAs and value as well as the importance of health education activities within their agencies and the communities they serve. Although a few studies have measured competency levels and training needs, researchers generally inquired about the KSAs and/or competencies of academicians or health educators working professionally in the field (Davidson, 2008; Demers &

Mamary, 2008; Johnson et al., 2005; NCHEC, SOPHE, & AAHE, 2010; PHFCOL, 2006). However, no studies that have targeted a specific group or workplace setting that employ health educators. The only research study targeting employers of health educators selected participants from organizations that currently or were likely to employ a professional health educator (Gambescia, et al., 2009). Therefore, the current study fills an important gap in the literature.

Prevalence of Health Educators and Others Employed by LHD/LHA

The descriptive findings of this study revealed that approximately two-thirds of LHD/LHAs employed one or more persons with the title of health educator while about one-third employed no one with that specific job classification/title. Other personnel conducting health education and related activities for all responding LHD/LHAs include (in descending order) RN/PHNs, Health Directors, Nutritionist, and Environmental Health Specialists.

Moreover, agencies identified those who conduct health educators activities, but without formal, academic health education training, as RN/PHNs, Health Directors, Environment Health Specialists, and Nutritionists. The categories are almost identical as agencies with titled health educators except for the order of prevalence. These findings are consistent with the literature on the public health workforce in general as Registered Nurses continue to be the largest single professional category within the public health workforce while Environmental Health Specialists rank as the second largest classification (NACCHO, 2011).

Prevalence of Reasons a Health Educator is not Employed by LHD/LHA

Hiring practices were examined to ascertain factors that hinder or prohibit LHD/LHAs from employing a professional with the title of health educator. The lack of funding for the position was the most common reason, which is consistent with the literature where local, state, and federal budget crises and cuts are targeted at health programs (NACCHO, 2012; Perlino, 2006). Limited staffing options were another factor, which can be attributed to the workforce crisis as well.

Additionally, respondents indicated that the cost of employing someone with the title of health educator cannot be justified based on the potential return on investment, which has more than one implication. For example, there continues to be a challenge to demonstrate that health education is cost-effective over the long-term. There is also a mindset that employing another public health professional other than a health educator who can carry out multiple roles is more feasible and cost-effective due to the lack of funding for LHD/LHAs. Both of the aforementioned issues have been highlighted in various research studies over the years relating to the shrinking funds for the public health workforce as well as the reduction in workforce numbers projected for the next several years (ASPH, 2008; ASTHO, 2004; Gebbie et al., 2009; NACCHO, 2012; Perlino, 2006). Several resources have indicated that within the next few years, state and federal public health agencies could lose up to half of their workforce. Furthermore, the reduction of the public health workforce (41%) and the lack of governmental funding for the public health infrastructure are largely due to the economic and political environment (Allegrante et al., 2001; Barry et al., 2009; Lichtveld et al., 2001; NACCHO, 2012).

Qualitative Findings of Why a Health Educator is not Employed by LHD/LHA

The qualitative analysis revealed additional insight into the basis for not employing a titled health educator. The most common theme was that staff are cross-trained and have duties/roles that include health education, which also points to the shrinkage of both the public health workforce and funding for local health agencies. The second most common theme was that administrators felt experienced RN/PHNs have the education and experience necessary to conduct health education activities, thereby making the need for a dedicated health educator unnecessary. This opinion was also expressed in other research where nearly one-third of those surveyed did not hire health educators because they felt that others could effectively carry out the responsibilities of a professionally trained health educator (Gambescia, et al., 2009). Other interrelated themes included lack of workload to employ a health educator and not a focus at this time. The two other reasons were lack of credentialed health educators and the title of health educator is out-dated and restrictive to the agency's scope of work. The lack of credentialing as a reason for not employing a health educator is surprising as there are over 12,000 health education specialists with the CHES designation (NCHEC, 2008b).

Speculation about hiring practices might also point to the lack of understanding of the unique and specific competencies and KSAs that academically trained health educators can provide to an agency. This ideology is consistent with a large body of research on the need to promote a greater level of awareness to public health agencies and organizations about the competencies and KSAs of the professional public health educator (ASPH, 2008; Cahn et al., 2007; Gebbie et al., 2009; Gebbie, Merrill, & Hwang

et al., 2002; Hoge et al., 2009; PHFCOL, 2009; Woodhouse et al., 2006). It is interesting to note that four respondents employed staff who were either CHES or MCHES but did not have the “title” of health educator. Therefore, there is a need for agencies to have a better understanding of the roles and responsibilities (KSAs) of health educators as practicing professionals in the public health workforce.

Importance/Value of Health Education and Related Activities

The public health workforce carries out the 10 EPHS within varying contexts with health education being one of these services. There are several articles regarding the training of public health practitioners to ensure that they possess the adaptable competencies needed to provide these essential services (Amodeo, 2003; ASTHO, 2004; Cioffi et al., 2004; IOM, 2003; Mays et al., 2004).

In the current study, having someone employed with the title of health educator was not a factor in rating the importance of health education and related activities. Regardless of titled employees within each respective agency, the findings showed that over three-fourths of all participating LHD/LHAs considered health education activities as very important/important to both their agency and the community. In other words, although LHD/LHAs value health education activities, and regard them as important services to their respective communities, these activities are not tied to a titled person (i.e. a health educator).

While it is clear that administrators deem health education activities to be significant and essential for the health and well-being of their communities, yet employing others to carry out these duties illustrates the lack of value they place on

academically trained health educators. Health educators have specific knowledge and skill sets that enable them to improve the health of the communities they serve. There is a concern that when other personnel are performing these duties, they may lack a complete understanding of how to achieve effective changes within the population of interest. Therefore, the lack of academically trained health educators within LHD/LHAs may result in less than optimal outcomes for the health of communities. Although others may conduct some of the health education activities with good results, a trained health educator has a better understanding of how to facilitate long-term change/outcomes for the health of their community and show evidence of those outcomes (NCHEC, 2008b; NCECH, 2008c; NCHEC, SOPHE, & AAHE, 2010). Consequently, it may become an elusive goal for LHD/LHAs to excel in meeting the desired outcomes for the health needs of the community they are serving.

Competency Levels in Academically Trained Health Educators and Others

The current study provided insight into the perceived competency levels of titled public health educators in a local public health practice setting. Additionally, the competency levels of those without a formal title performing health education activities were examined. As previously noted, agencies employing an academically trained health educator reported a large percentage of areas where they perceived health educators to be competent. The range of percentages for 52 of the 57 competency areas was 71% - 98%.

As for the other five areas, percentages were rated from 55% - 69%, which included: (a) designing instruments to collect data for evaluation & research (55%); (b) developing plans for data collection, analysis, and interpretation (58%); (c) developing data collection instruments and methods (60%); (d) integrating research designs, methods, and instruments into assessment plans (61%); and (e) incorporating media and technology in advocacy (69%).

Likewise, LHD/LHAs without a titled health educator also reported their assessment of competency levels of other public health personnel performing health education activities. Of the 57 competency areas rated, 50 were perceived as competent with a range of 70% - 100%. There was only one competency area with a 100% rating, which was complying with existing laws and regulations. The seven competency areas where prevalence rates were less than 70% included: (a) developing data collection instruments and methods (59%); (b) designing instruments to collect data for evaluation & research (63%); (c) integrating research designs, methods, and instruments into assessment plans (63%); (d) determining the range of health education needed to achieve goals and objectives (64%); (e) developing plans for data collection, analysis, and interpretation (67%); (f) employing technology to communicate to priority populations (68%); and (g) developing volunteer opportunities (70%).

Between the two groupings, there were a few interesting commonalities with regards to competency needs. Whether the person conducting health education held a title of health educator had no bearing on the need for improvement in developing data collection instruments and methods; developing plans for data collection, analysis, and

interpretation; designing instruments to collect data for evaluation and research; and integrating research designs, methods, and instruments into assessment plans. Similar findings from other studies identified these areas as training needs for public health personnel and health educators (Allegrante et al., 2001; Davidson, 2008; Demers & Mamary, 2008; IOM, 2003; Lichtveld & Cioffi, 2003).

In the current study, competency associations were investigated to determine the areas with the largest gaps in competencies between the two groups; titled health educators were competent and other public health practitioners were less competent. The competency areas where these deficits were most notable included: (a) applying ethical principles in consultative relationships; (b) assessing capacity of potential partner(s) to meet program goals; (c) determining the range of health education needed to achieve goals and objectives; (d) developing volunteer opportunities; (e) facilitating collaborative efforts to achieve program goals; (f) facilitating professional growth of self and others; (g) facilitating cooperation among stakeholders responsible for health education; (h) identifying & prioritizing health education needs; (i) identifying current and emerging issues that may influence health and health education; (j) informing, educating, & empowering people about health issues; (k) linking people to needed personal health services and assuring the provision of health care when otherwise unavailable; (l) using data to support advocacy messages; and (m) using strategies to ensure cultural competence in implementing health education plans. Studies have shown that areas of improvement for the health educator as well as the public health workforce include cultural competency; ethics; coalition building and leadership advocacy; conducting

evaluation related to health education; administering health education strategies, interventions, and programs; and communicating and advocating for health and health education (Allegrante et al., 2001; Crawford et al., 2009; Davidson, 2008; Demers & Mamary, 2008; Hill et al., 2010; IOM, 2003)

High Need for Training in KSAs of Other Personnel Performing Health Education

This study also identified perceived KSA areas in which academically trained health educators were deficit and needed more training. All LHD/LHAs ranked the needs of all personnel conducting health education activities and duties. When comparing high training needs of agencies who employed a titled health educator (HE/Y) and those who did not (HE/N), associations reflected that the difference in the prevalence of needs for KSAs were concentrated to a larger degree in those performing the work of health education without a formal title. The KSAs for high needs included: (a) complying with existing laws and regulations (HE/Y=22.7%; HE/N=33.8%); (b) developing volunteer opportunities (HE/Y=17.7%; HE/N=27.9%); (c) enforcing laws and regulations that protect health and ensure safety (HE/Y=17.7%; HE/N=25.4%); (f) engaging in professional development activities (HE/Y=28.1%; HE/N=40.3%); and (g) linking people to needed personal health services & assure the provision of health care when otherwise unavailable (HE/Y=25.8%; HE/N=33.9%).

High Need for Training in KSAs of Academically Trained Health Educators

Alternatively, while exploring the perceived high KSA training needs of both groups, those with (HE/Y) and without (HE/N) formally titled health educators, there were also areas where the difference in the prevalence of needs were shown to be greater

in titled health educators. These KSAs included: (a) employing technology to communicate to priority populations (HE/Y=41.7%; HE/N=34.3%); (b) identifying desired outcomes utilizing needs assessment results (HE/Y=40.9%; HE/N=28.6%); (c) identifying potential partner(s) (HE/Y=35.5%; HE/N=23.8%); (d) monitoring health status to identify community health problems (HE/Y=42.4%; HE/N=33.9%); (e) using assessment results to inform the planning process (HE/Y=40.7%; HE/N=29.0%); and (f) using data to support advocacy messages (HE/Y=37.6%; HE/N=24.2%).

It is of notable importance to examine the reported need for additional training, specifically with regards to the NCHEC areas of responsibilities that are part of the core competencies of health educators. Other KSA training needs are more aligned with the 10 EPHSs that are traditionally part of the training of the public health workforce in general. For example, several studies have identified KSA needs that are fairly consistent with the results of this current study, such as: designing data-collection instruments; interpreting evaluation and research results; carrying out evaluation and research plans; developing health education programs using social marketing principles; analyzing and interpreting needs assessment data; becoming more proficient at computing and technology; and developing plans for evaluation and research (Allegrante et al., 2001; Cahn et al., 2007; Conte et al., 2006; Davidson, 2008; Demers & Mamary, 2008; Gebbie et al., 2009; Gebbie, Merrill, & Hwang et al., 2002; IOM, 2003; Johnson et al., 2005; Montgomery et al., 2010).

Implications and Recommendations for Health Education

The findings from this current study have important implications for the field of the health education profession, particularly with regards to curriculum development and the underlying competencies. All academic health education programs are designed to educate students based on the NCHEC competencies of health education. As these seven core areas of responsibilities are the building blocks of academic health education curriculum and programs, it is imperative that there be a system in place to measure the proficiency levels of graduated students once they enter the workforce. Moreover, competencies need to be assessed to determine if core competencies and KSAs are being met by academically trained health educators as they become practitioners in the field, regardless of the workplace setting.

How performance measures are being conducted is haphazard at best, and this current study adds to the body of research indicating that the system for identifying additional training needs is fragmented. Most measures are reported by either the health educators, or by academicians and other health education professionals. In order to adequately measure performance in the workforce, employers and/or supervisors of health educators need to be included in these assessments. This current study adds to the body of research by concentrating on the assessment of competencies and KSAs of those performing health education activities to one distinct population of employers that generally employs at least one health educator.

The implications for academic preparation of health educators are that competency levels of graduates must be measured and adjustments to the curriculum must be made in order to translate educational outcomes into effective professional output. There is an additional need to promote a greater level of awareness about what competencies and KSAs of the academically prepared public health educator have to offer to public health agencies and organizations in order to underpin a larger contextual framework of the capabilities of those entering the workforce.

Also, the practicum portion of academic training could serve as a building block to assess performance in a professional setting at the end of a student's academic program. This would potentially provide insight about the level of competencies future health education practitioners possess or lack, allowing for improvements to health education program curriculum and objectives in order to better prepare future health educators. Additionally, improving the service-learning portion through internships that are mutually beneficial for both student and agency needs would complement the relationship of academic standards and professional development.

As the accreditation landscape is shifting and transitioning from SABPAC to CEPH, competencies and core concepts of health education programs are undergoing changes within their curriculum. The emphasis on public health, whether it is in health education or another concentration, is leading to some changes in the core courses as well as some competency areas for health education programs (National Implementation Task Force for Accreditation in Health Education, 2008). CEPH criteria encompass five core areas of public health and require that all coursework be defined on the basis of linking to

competencies, which should help to clearly articulate what competencies are and will be measured; however, as this change takes place, measuring students competencies has become even more challenging (National Implementation Task Force for Accreditation in Health Education, 2012). Nonetheless, in the long term, this shift should benefit all undergraduate public health education programs as there will be a single unified accrediting body for all programs and potentially a set of standard outcome measures.

Limitations

There are several limitations to note about this survey-based study, and the findings reported must be understood within the context of this research. The sample size was relatively small given the actual number of potential participants. Also, this study utilized purposeful sampling to a specific target population; therefore, the results cannot be generalized to the general population. As this was a pilot study with a survey constructed by the researcher, question construction, design, and length of the survey may have hindered participation or completion of the survey. Given that the average amount of time required to complete the survey was close to one hour, the length of the survey could have been a hindering factor in starting and/or completing the survey. Additionally, due to the range of response categories for KSAs, there were several cell counts that had five or fewer responses. However, it should be noted that the responses of those who elected to participate reflect the opinions of conscientious and committed LHD/LHA supervisors.

In addition, this study utilized only self-reported data that cannot be substantiated, which could lead to the potential for error. Also, the survey has not been validated as

either an online or pen and paper instrument. Participants may not have had a working knowledge base of either competencies or KSAs, which might have limited their ability to adequately answer some of the survey questions. Although the survey was sent to administrators/supervisors at LHD/LHAs, other personnel may have been delegated to answer the questions on the survey, thereby skewing the results.

Recommendations for Future Research

A variety of suggested recommendations for future studies can be made based on the findings of this study. First, a valid and reliable instrument for measuring competency levels and KSAs must be developed that determines what core competencies for health education practitioners are quantifiable and frames questions that might make them more measurable overall. Secondly, reducing the number of items on both the competency scale and KSA scale might encourage greater participation. Shortening the length of time it takes to complete the survey will help to increase participation and completion rates. Third, based upon the qualitative data, focus groups or individual interviews with agency supervisors would likely yield a deeper understanding of hiring practices, budgeting issues, areas where health educators are lacking adequate preparation for the workforce, as well as establish a better understanding of other personnel performing health education activities. Finally, establishing a database of other sample populations/settings that typically employ health educators (e.g. school health, workplace health, etc.) will allow more insight on the competencies and KSAs they deem as essential in the delivery of health education.

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APPENDIX A

Consent/Cover Letter E-mail

Consent/Cover Letter E-mail

Dear Participant,

You are invited to participate in a research study being conducted as part of a doctoral dissertation, entitled “*Workforce Development and Health Education Competencies: Are We Preparing the Future Public Health Workforce for Success in the Field?*” The study is being conducted by Deidre J. Holland, MPH, CHES, REHS from the Department of Health Studies at Texas Woman’s University, P.O. Box 425499, Denton, TX, 76204-5499, Office: 940-898-2860, Cell: 570-XXX-XXXX, E-mail: dholland@twu.edu.

The return of your completed questionnaire constitutes your informed consent to act as a participant in this research. If you agree to participate, click on the following link <https://www.psychdata.com/s.asp?SID=155993>

The purpose of this research study is to examine and measure local public health workforce needs and gaps in regards to the proficiency levels of currently employed health educators by identifying which competencies and/or skills are regarded as important and which are lacking in professional public health educators. Competencies are generally defined as the abilities and knowledge one gains upon completion of a particular program or course of study; in this case, specifically health education. Other information gathered will include who performs health education in your organization as well as some demographic information about your organization.

This survey is intended to be completed by the administrator, health officer, manager, and/or supervisor of health educators or those conducting the work of health educators within your organization. If you are not the appropriate person to be completing this survey; please forward it to the appropriate person.

Your participation in the study will contribute to a better understanding of the local public health workforce. Local Health Departments/Agencies (LHD/LHAs) are the front line of public health and are responsible for ensuring and delivering the ten (10) essential services of public health. The intent of this study is to gain a better understanding of the value and/or benefits of a competently and academically trained health educator to your LHD/LHA as well as areas that may be lacking in the core competencies of health educators. Graduates of health education programs are prepared for the workforce based on specific competencies on which the curriculum is built; therefore the **importance of establishing if employers’**

expectations are being met is vital to workforce competency as a core underpinning of the public health infrastructure.

Your participation is important to ensure that we get an accurate representation of the needs of LHD/LHAs. You are free to contact the investigator at the above address and phone number to discuss the study. If you agree to participate:

- Your responses to the survey questions are voluntary and will be confidential;
- It should take you approximately 30-60 minutes of your time to complete the survey;
- There are 13 questions total (and only 3 open-ended questions);
- You do not need to complete the survey in one sitting - you can return to the survey site multiple times;
- This survey focuses on LHD/LHAs because this is where public health worker shortages are most critical;
- Your organizations' contribution and perspective is vital to the research study as competencies provide guidance in local public health activities, as well as provide direction for training, evaluation, and hiring practices; and
- By participating in this research study, your LHD/LHA will be shaping the education, skills, and training needs for a competent health educator in the field of public health.

Risks/Benefits/Confidentiality of Data

Participation in this survey represents no additional risk. There will be no costs for participating, nor will you benefit from participating. Your answers will be kept anonymous and confidential. Your e-mail address will be kept during the data collection phase for tracking purposes only. Once the data has been collected, all e-mail addresses will be stripped from the dataset.

There is a potential risk of loss of confidentiality in all email, downloading, and internet transactions. A limited number of research team members will have access to the data during data collection.

Participation or Withdrawal

Your participation is voluntary and you may decline to answer any question and refuse to participate at any time. Withdrawal will not affect your relationship with Texas Woman's University in anyway. If you do not want to participate either simply stop participating or close the browser window.

If you do not want to receive any more reminders, you may email us at dholland@twu.edu to opt out of future emails.

Contacts

If you would like to see the results of this study, have any questions about the study, or need to update your email address, please contact the researcher, Deidre J. Holland at 940-898-2860 or send an email to dholland@twu.edu.

This study has been reviewed by the Institutional Review Board at Texas Woman's University and the study number is 155993.

Questions about your rights as a research participant.

If you have questions about your rights or are dissatisfied at any time with any part of this study, you can contact, anonymously if you wish, the Institutional Review Board by phone 940-898-3378 or by e-mail at irb@twu.edu.

If you agree to participate, click on the following link

<https://www.psychdata.com/s.asp?SID=155993>

The password for the study is one you create yourself which contains six characters, allowing you to save and exit while you complete the questionnaire.

The survey link will be available from 2/10/2014 to 4/10/2014.

If you would like to see the results of this study, please click on the following link:

<https://www.psychdata.com/s.asp?SID=158622>.

This link provides a separate database, not linked to the survey you completed, which assures that your responses are kept anonymous and confidential.

Thank you in advance for your time and participation. Your input will be very helpful in shaping the future public health workforce and infrastructure.

Please be assured that your answers will be kept anonymous and confidential. Demographic information such as the size of population served by your agency is for categorical purposes only.

Please print a copy of this document for your records.

Thank you for your time and attention.

Sincerely,

Deidre

Deidre J. Holland, MPH, CHES, REHS, PhD(c)
Texas Woman's University
Department of Health Studies
P.O. Box 425499
Denton, TX, 76204-5499
Office: 940-898-2860
Cell: 570-XXX-XXXX
E-mail: dholland@twu.edu.

Your help and input are greatly appreciated!

APPENDIX B

Reminder E-mails to Participants

Reminder E-mail

Approximately three (3) weeks ago, you should have received an e-mail asking you to complete a survey as part of a research study about the health education workforce within your agency.

Your participation is voluntary, and will help us gain a better understanding of the value and/or benefits of a competently and academically trained health educator as well as areas that may be lacking in the competencies of health educators.

Your participation is voluntary and will help us obtain an accurate representation of the needs of LHD/LHAs, should you agree to participate. You are free to contact the investigator at the above address and phone number to discuss the study. If you agree to participate:

- Your responses to the survey questions are voluntary and will be confidential;
- It should take you approximately 30-60 minutes of your time to complete the survey;
- There are 13 questions total (and only 3 open-ended questions);
- You do not need to complete the survey in one sitting - you can return to the survey site multiple times;
- This survey focuses on LHD/LHAs because this is where public health worker shortages are most critical;
- Your organizations' contribution and perspective is vital to the research study as competencies provide guidance in local public health activities, as well as provide direction for training, evaluation, and hiring practices; and
- By participating in this research study, your LHD/LHA will be shaping the education, skills, and training needs for a competent health educator in the field of public health.

Risks/Benefits/Confidentiality of Data

Participation in this survey represents no additional risk. There will be no costs for participating, nor will you benefit from participating. Your answers will be kept confidential. Your e-mail address will be kept during the data collection phase for tracking purposes only. Once the data has been collected, all e-mail addresses will be stripped from the dataset. There is a potential risk of loss of confidentiality in all email, downloading, and internet transactions. A limited number of research team members will have access to the data during data collection.

Participation or Withdrawal

Your participation is voluntary and you may decline to answer any question and refuse to participate at any time. Withdrawal will not affect your relationship with Texas Woman's University in anyway. If you do not want to participate either simply stop participating or close the browser window. If you do not want to receive any more reminders, you may email us at dholland@twu.edu to opt out of future emails.

Contacts

If you would like to see the results of this study, have any questions about the study, or need to update your email address, please contact the researcher, Deidre J. Holland at 940-898-2860 or send an email to dholland@twu.edu. This study has been reviewed by the Institutional Review Board at Texas Woman's University and the study number is 155993.

Questions about your rights as a research participant.

If you have questions about your rights or are dissatisfied at any time with any part of this study, you can contact, anonymously if you wish, the Institutional Review Board by phone 940-898-3378 or by e-mail at irb@twu.edu.

If you agree to participate, click on the following link

<https://www.psychdata.com/s.asp?SID=155993>

The password for the study is one you create yourself which contains six characters, allowing you to save and exit while you complete the questionnaire. The survey link will be available from 2/10/2014 to 4/10/2014.

If you would like to see the results of this study, please click on the following link:

<https://www.psychdata.com/s.asp?SID=158622>. This link provides a separate database, not linked to the survey you completed, which assures that your responses are kept anonymous and confidential.

Thank you in advance for your time and participation. Your input will be very helpful in shaping the future public health workforce and infrastructure. Please be assured that your answers will be kept anonymous and confidential. Demographic information such as the size of population served by your agency is for categorical purposes only.

Please print a copy of this document for your records.

Thank you for your time and attention.

Sincerely,

Deidre

Deidre J. Holland, MPH, CHES, REHS, PhD(c)

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Department of Health Studies

P.O. Box 425499

Denton, TX, 76204-5499

Office: 940-898-2860

Cell: 570-XXX-XXXX

E-mail: dholland@twu.edu.

APPENDIX C

Institutional Review Board Approval Letter



The Graduate School

P.O. Box 425649, Denton, TX 76204-5649

940-898-3415 FAX 940-898-3412 gradschool@twu.edu

0925634

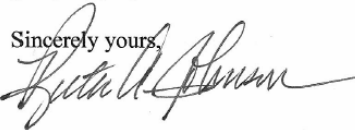
August 28, 2013

Deidre Holland

Dear Ms. Holland:

I have received and approved the prospectus entitled *Workforce Development and Health Education Competencies: Are We Preparing the Future Public Health Workforce for Success in the Field?* for your Dissertation research project.

Best wishes to you in the research and writing of your project.

Sincerely yours,


Ruth A. Johnson, Ph.D.
Associate Dean of the Graduate School

kjb

cc: Dr. Kristin Wiginton, Health Studies
Dr. Gay James, Chair, Health Studies