A Thesis

Entitled

Institutions of Higher Education Pre-Service School Health Education Practices

by Brad Robert Davidson

Submitted to the Graduate Faculty as partial fulfillment of the
requirements for the Master of Education Degree in Health Education

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December 2009

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An Abstract of
Institutes of Higher Education Pre-Service School Health Education Practices

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Brad Robert Davidson

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August 2009

The purpose of this study was to assess the current practices of school health education faculty members at institutes of higher education that have school health teacher preparation programs. Specifically, this study determined the amount of time and the content taught related to the following school health education materials tools: Youth Risk Behavior Surveillance (YRBSS); School Health Profiles Survey (Profiles); School Health Policies and Programs Study (SHPPS); Characteristics of Effective Health Education Curriculum; National Health Education Standards (NHES); Health and Academics; School Health Index (SHI); Health Education Curriculum Analysis Tool (HECAT); and the CDC's School Health Education Resources (SHER). A valid and reliable survey with 87 items was mailed to a national sample of 225 lead school health education faculty members at institutes of higher education (IHE). The response rate was

59.55% (134/225). The respondents were predominately female (67.9%), with a Ph.D. or equivalent (76.9%), worked as a tenured faculty member (56.0%), was an associate professor (29.9%), had a state license/certification to teach health education (62.7%), and most (83.6%) belonged to a health education professional organization.

A majority of IHEs taught about the results and trends as well as general information about the YRBSS (79.9% and 80.6%). However, the results and trends of both the Profiles and SHPPS were not taught at IHEs (61.2% and 48.5% respectively). Interestingly, a majority of IHEs taught about the purpose of the SHI (59.0%) but did not teach about how to conduct a needs assessment using the SHI (51.5%), nor did IHEs teach about how to use the results to create healthy changes in schools (52.2%). A majority of IHEs described both the Characteristics of Effective Health Education Curricula (88.1%) and the NHES (89.6%) to their students. Moreover, the relationship between health and academic achievement was taught at most IHEs (61.9%). Finally, 51.5% of IHEs do not teach about using the CDC's School Health Education Resources (SHER) web tool. A primary responsibility of IHEs is to provide the tools necessary to pre-service teachers to utilize the tools and products described in this study. This study found that many IHEs do not train their pre-service school health education majors to use these tools and products. It is imperative that IHE school health teacher preparation faculty be trained on how to use these tools and products.

Acknowledgements

I would like to thank Dr. Susan Telljohann for being my Chairperson throughout this endeavor. Not only has her strong efforts in support and encouragement helped me accomplish this wonderful feat, but have assisted me in my growth as an educator. I am forever grateful for your guidance and persistence to excellence in and out of the classroom. I want to thank you for making the University of Toledo a great place for secondary education as well as a home away from home. I will always think of you as both a mentor and a friend, especially with our great badminton championship that we won together.

This has been a tough and grueling project that could not have been accomplished without the support of my committee members. Both Dr. Joseph Dake and Dr. James Price have been equivalent components to my process during my time in the masters program at the University of Toledo. Both of your support, assistance, and motivation have guided me to levels beyond my working ability. It is for your efforts that I will be forever a better person.

To my office mates and friends, I am always thankful for the great time that we had in the department. I was able to be successful because all of you made me feel welcomed, comfortable, and relaxed when needed.

To my mother and father, thank you for all of your love and encouragement. It is because of both you that I have been able to grow and work towards everything that I have achieved. I will always live my life in a way that makes you proud of me. I love you both so very much.

Finally, thanks to my fiancée Kelly for always being the solid foundation in my life. I love you and I can only hope to make you as happy as you have made me. I look forward to the many days that we will be together. You are not only my fiancée but my best friend that I look forward to sharing the rest of my life with.

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Chapter One

Introduction

This chapter will provide an overview of Institutions of Higher Education (IHE) school health teacher preparation programs in the United States. Specifically, the following sections are included in this chapter: Statement of the Problem, Significance of the Problem, Purpose of the Study, Research Questions and Hypotheses, Definitions of Terms, Delimitations, and Limitations.

Statement of the Problem

Each day over 50 million students attend private and public schools across America (National Center for Educational Statistics [NCES], 2009). Nationwide, most middle schools (86.3%) and high schools (90.2%) have adopted a policy requiring health education (Kann, Telljohann, & Wooley, 2007). The health of these students can be impacted positively depending on the quality of the health instruction they receive from their health education teacher (CDC, 2007a). Health teachers have been shown to positively influence student health by reducing the prevalence of risky health behaviors and improving academic performance (Dent et al., 1995; Hawkins, et al., 1999; Coleman, et al., 2005).

The quality of the health education teacher is partially dependent upon the education they receive from their school health teacher preparation program. Therefore, it is important that IHE school health teacher preparation programs have quality programs and teach pre-service students the most current information and skills available in health education. Most states (74.5%) and districts (79.3%) set forth policies requiring school districts to follow national or state health education standards or guidelines (Kann, Telljohann, & Wooley, 2007). Moreover, it is important that newly trained school health educators understand and can use national and/or state health education standards.

Results from the 2006 School Health Policies and Programs Study (Kann, Telljohann, & Wooley, 2007) found that 72.0% of middle schools and 82.0% of high schools had adopted policies requiring newly hired health education teachers to have training in health education at the undergraduate or graduate level. However, this same report found that only 56.9% and 76.8% of middle school and high school newly hired health education teachers had actually received undergraduate or graduate training in health education. It was also found that only 58.8% and 78.4% of required health education was being taught by trained health education teachers at the middle school and high school levels, respectively.

In order to have the best prepared health teachers, it is critical to learn about the current practices at IHEs to improve the health of youth in America. A comprehensive review of the literature yielded little research about the current practices at IHE and the education provided to pre-service school health education students. This gap in knowledge is problematic. Educating pre-service school health education teachers on tools such as the Youth Risk Behavior Surveillance System (YRBSS), the School Health

Index (SHI), the Health Education Curriculum Analysis Tool (HECAT), and the National Health Education Standards (NHES) could help these teachers improve the health of the children and adolescents they will be teaching in the future. For this reason, the current study assessed the amount of education provided to pre-service school health education students regarding the various tools used to improve the health of children across America.

Significance of the Problem

Pre-service health education teacher preparation programs play a significant role in preparing future school health educators. According to Frauenknecht (2005, pg. 24), “standards for teachers in all subject areas, including health education, were needed to specifically determine the competencies for professional development to be demonstrated.” Frauenknecht (2005, pg. 24) also noted that “professional standards for health education teachers have been developed based on the necessary content, pedagogical, and professional knowledge and skills to teach both independently and collaboratively.” The National Council for Accreditation of Teacher Education (NCATE) is the primary organization that determines if Institutions of Higher Education (IHE) are meeting professional standards in each teaching licensure program (NCATE, 2007). NCATE worked with the American Association for Health Education (AAHE) to determine the health education standards IHEs need to meet to be accredited by NCATE (NCATE, 2007). Out of the 226 IHEs that have a school health licensure/certification program, only 34 have been accredited by NCATE. The AAHE/National Council for Accreditation of Teacher Education (NCATE) Program Standards for Health Education (AAHE, 2009) includes:

1. Content Knowledge: Candidates demonstrate the knowledge and skills of a health literate educator.
2. Needs Assessment: Candidates assess needs to determine priorities for school health education.
3. Planning: Candidates plan effective comprehensive school health education curricula and programs.
4. Implementation: Candidates implement health education instruction.
5. Assessment: Candidates assess student learning.
6. Administration and Coordination: Candidates plan and coordinate a school health education program.
7. Being a Resource Person. Candidates serve as a resource person in health education.
8. Communication and Advocacy. Candidates communicate and advocate for health and school health education.

Although the NCATE accreditation health education program standards include many important concepts and skills, they do not determine if IHE school health teacher preparation programs utilize recently developed school health education tools (NCATE, 2007). One such tool is the National Health Education Standards, developed by the Joint Committee on National Health Education Standards (NHES) with representatives from the American Association for Health Education, the American School Health Association, the American Public Health Association and the American Cancer Society (Joint Committee on National Health Education Standards, 2007, pg. 113). The NHES

are a structure for building a health education curriculum that explains what a student should know and be able to do by specific grade levels (CDC, 2007b).

The NCATE health education program standards also do not include the use of materials and tools developed by the Centers for Disease Control and Prevention (CDC), or more specifically, the Division of Adolescent and School Health (DASH), such as the School Health Index (SHI), Youth Risk Behavioral Surveillance System (YRBSS), Health and Academics, Characteristics of Effective Health Education Curricula, and the Health Education Curriculum Analysis Tool (HECAT). These tools serve a variety of functions to help improve school health. The purpose of the SHI is a self-assessment tool and a guide to plan effective health education by assessing a schools health and safety policies and programs through the standpoint of a coordinated school health program (CDC, 2008e). The HECAT is a tool that is used to assess health education curricula for the benefits of a school or school district. The HECAT is based on the NHES and the Characteristics of Effective Health Education Curricula. The YRBSS is a survey conducted by various groups at different levels. It is used to examine youth and young adults' leading health-risk behaviors and the occurrence of obesity and asthma (CDC, 2009c). Those priority health-risk behaviors include: (a) unintentional injuries and violence; (b) tobacco use; (c) alcohol and other drug use; (d) sexual behaviors; (e) unhealthy dietary behaviors; and (f) physical inactivity. The Characteristics of Health Education were created from a synthesis of school health education evaluation studies. When included in a health education curriculum, these characteristics have been shown to help improve the health practices of children and adolescents. These characteristics emphasize essential concepts such as: (a) shaping group norms that value a healthy

lifestyle; (b) developing the skills needed to adopt and maintain health-enhancing behaviors; (c) shaping personal values that support healthy behaviors; and (d) teaching functional health information (CDC, 2007a). Finally, there is a strong connection between the health of America's youth and their academic performance (CDC, 2009a). Academic achievement is a major goal for school health programs; which is why health-related factors and risky behaviors are increasingly shown to have a negative impact on academic success (CDC, 2009a). None of the aforementioned materials and tools are included in the NCATE health education standards.

Purpose of the Study

The purpose of this study was to assess the current practices of school health education faculty members at institutions of higher education that have school health teacher preparation programs. Specifically, this study determined the amount of time and the content taught related to the following school health education materials and tools:

1. Youth Risk Behavior Surveillance (YRBSS);
2. School Health Profiles Survey (Profiles);
3. School Health Policies and Programs Study (SHPPS);
4. Characteristics of Effective Health Education Curricula;
5. National Health Education Standards (NHES);
6. Health and Academics;
7. School Health Index (SHI);
8. Health Education Curriculum Analysis Tool (HECAT); and the
9. CDC's School Health Education Resources (SHER)

Research Questions and Hypotheses

Research Question 1

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the Youth Risk Behavior Surveillance System (YRBSS)?

- Hypothesis 1.1: The majority of institutions of higher education with pre-service school health education do not offer education about the YRBSS.
- Hypothesis 1.2 – There is no significant difference in the amount of time spent teaching about the YRBS between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 1.3 – There is no significant difference in the amount of time spent teaching about the YRBS between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 1.4 – There is no significant relationship between the amount of time spent teaching about the YRBS and the number of full time health education faculty.
- Hypothesis 1.5: There is no significant relationship between the amount of time spent teaching about the YRBS and the number of required field experience hours.

Research Question 2

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the Characteristics of Effective Health Education Curriculum?

- Hypothesis 2.1 – The majority of institutions of higher education with pre-service school health education do not offer education about the Characteristics of Effective Health Education Curriculum.
- Hypothesis 2.2 – There is no significant difference in the amount of time spent teaching about the Characteristics of Effective Health Education Curricula between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 2.3 – There is no significant difference in the amount of time spent teaching about the Characteristics of Effective Health Education Curricula between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 2.4 – There is no significant relationship between the amount of time spent teaching about the Characteristics of Effective Health Education Curricula and the number of full time health education faculty.
- Hypothesis 2.5 – There is no significant relationship between the amount of time spent teaching about the Characteristics of Effective Health Education Curricula and the number of required field experience hours.

Research Question 3

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the School Health Policies and Programs Study (SHPPS)?

- Hypothesis 3.1 – The majority of institutions of higher education with pre-service school health education do not offer education about the School Health Policies and Programs Study (SHPPS).
- Hypothesis 3.2 – There is no significant difference in the amount of time spent teaching about the SHPPS between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 3.3 – There is no significant difference in the amount of time spent teaching about the SHPPS between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 3.4 – There is no significant relationship between the amount of time spent teaching about the SHPPS and the number of full time health education faculty.
- Hypothesis 3.5 – There is no significant relationship between the amount of time spent teaching about the SHPPS and the number of required field experience hours.

Research Question 4

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the School Health Profiles Survey (Profiles)?

- Hypothesis 4.1 – The majority of institutions of higher education with pre-service school health education do not offer education about the Profiles.
- Hypothesis 4.2 – There is no significant difference in the amount of time spent teaching about the Profiles between IHEs who offer a major and those who do not offer a major in health education.

- Hypothesis 4.3 – There is no significant difference in the amount of time spent teaching about the Profiles between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 4.4 – There is no significant relationship between the amount of time spent teaching about the Profiles and the number of full time health education faculty.
- Hypothesis 4.5 – There is no significant relationship between the amount of time spent teaching about the Profiles and the number of required field experience hours.

Research Question 5

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the National Health Education Standards (NHES)?

- Hypothesis 5.1 – The majority of institutions of higher education with pre-service school health education do not offer education about the NHES.
- Hypothesis 5.2 – There is no significant difference in the amount of time spent teaching about the NHES between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 5.3 – There is no significant difference in the amount of time spent teaching about the NHES between NCATE/TIAC accredited IHEs and non-accredited IHEs.

- Hypothesis 5.4 – There is no significant relationship between the amount of time spent teaching about the NHES and the number of full time health education faculty.
- Hypothesis 5.5 – There is no significant relationship between the amount of time spent teaching about the NHES and the number of required field experience hours.

Research Question 6

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about Health Status and Academics?

- Hypothesis 6.1 – The majority of institutions of higher education with pre-service school health education do not offer education about Health Status and Academics.
- Hypothesis 6.2 – There is no significant difference in the amount of time spent teaching about Health Status and Academics between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 6.3 – There is no significant difference in the amount of time spent teaching about Health Status and Academics between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 6.4 – There is no significant relationship between the amount of time spent teaching about Health Status and Academics and the number of full time health education faculty.

- Hypothesis 6.5 – There is no significant relationship between the amount of time spent teaching about Health Status and Academics and the number of required field experience hours.

Research Question 7

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the School Health Index (SHI)?

- Hypothesis 7.1 – The majority of institutions of higher education with pre-service school health education do not offer education about the SHI.
- Hypothesis 7.2 – There is no significant difference in the amount of time spent teaching about the SHI between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 7.3 – There is no significant difference in the amount of time spent teaching about the SHI between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 7.4 – There is no significant relationship between the amount of time spent teaching about the SHI and the number of full time health education faculty.
- Hypothesis 7.5 – There is no significant relationship between the amount of time spent teaching about the SHI and the number of required field experience hours.

Research Question 8

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the Health Education Curriculum Analysis Tool (HECAT)?

- Hypothesis 8.1 – The majority of institutions of higher education with pre-service school health education do not offer education about the HECAT.
- Hypothesis 8.2 – There is no significant difference in the amount of time spent teaching about the HECAT between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 8.3 – There is no significant difference in the amount of time spent teaching about the HECAT between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 8.4 – There is no significant relationship between the amount of time spent teaching about the HECAT and the number of full time health education faculty.
- Hypothesis 8.5 – There is no significant relationship between the amount of time spent teaching about the HECAT and the number of required field experience hours.

Research Question 9

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the CDC's School Health Education Resources (SHER) web tool?

- Hypothesis 9.1 – The majority of institutions of higher education with pre-service school health education do not offer education about the SHER.
- Hypothesis 9.2 – There is no significant difference in the amount of time spent teaching about the SHER between IHEs who offer a major and those who do not offer a major in health education.
- Hypothesis 9.3 – There is no significant difference in the amount of time spent teaching about the SHER between NCATE/TIAC accredited IHEs and non-accredited IHEs.
- Hypothesis 9.4 – There is no significant relationship between the amount of time spent teaching about the SHER and the number of full time health education faculty.
- Hypothesis 9.5 – There is no significant relationship between the amount of time spent teaching about the SHER and the number of required field experience hours.

Definition of Terms

Health – A state of complete physical, social, and mental well-being, and not merely the absence of disease or infirmity (WHO, 1948); a functional state which makes possible the achievement of other goals and activities of living (JCHEPT, 2001).

Health Education – Any combination of planned learning experiences based on sound theories that provides individuals, groups, and communities with opportunities to acquire information and skills needed to make quality health decisions (JCHEPT, 2001).

Health Education Curriculum Analysis Tool – A tool used for analyzing a health education curriculum by school districts, schools and others which is based on the NHES and the CDC’s Characteristics of Effective Health Education Curricula (CDC, 2008b).

Institution of Higher Education – The sequence of courses and experiences in general and professional studies required by a college/university for the preparation of professional education candidates to teach a specific subject or academic area, to provide professional education services, or to administer schools. A program can be a major in education; it can also be a major, minor, or endorsement in an academic area with professional education requirements for licensing (NCATE, 2008).

In-service Education – A program of instruction or training provided by an agency or institution for its employees. The program is held in the institution or agency and is intended to increase the skills and competence of the employees in a specific area. In-service education may be a part of any program of staff development. (The Free Dictionary, 2009).

Lead School Health Educator – The primary person in charge of the pre-service school health education program at an institution of higher education.

Majority – The number larger than half the total (Dictionary, 2009).

National Health Education Standards – “What a student should know and be able to do by grades 2, 5, 8, and 12 to promote personal, family, and community health” (CDC, 2007b).

Pre-service – 1. A teacher candidate. 2. Undergraduate education for those who intend to teach (ITEA, 2009).

Risk Behaviors – Contribute to the leading causes of death, disability, and social problems among youth and adults in the U.S. (CDC, 2004).

School Health Index – A tool used in schools to assess the health and safety policies and programs (CDC, 2008f).

Youth - The period of life from puberty to the attainment of full growth; adolescence (Dictionary, 2009).

Youth Risk Behavioral Surveillance System – A system used to observe youth and young adults major health-risk behaviors and the frequency of obesity and asthma (CDC, 2009b).

Delimitations

The researcher created one delimitation for this study.

1. The study was delimited to the lead school health education faculty at the colleges and universities that provide a health education major and/or minor.

Limitations

The findings of this study should be interpreted in light of its potential limitations:

1. To the extent that the response rate was less than 100%, the more likely it is to be a threat to external validity because non-respondents may have different practices than respondents regarding the educational practices of pre-service health education major and minor students.

2. The survey was based on self reports by health educators, which may have impact the internal validity of the study.
3. Respondents may have responded in a socially desirable manner, which may be a threat to the internal validity of the study.
4. To the extent that important questions on the current topic might not have been included on the final questionnaire, this too could have been a threat to the internal validity of the findings.

Chapter Two

Review of Literature

This chapter provides an overview of the relevance, importance and purpose of conducting the IHE Pre-Service School Health Education Practices Survey. This review of the literature includes the following topics: Pre-service Education in Health Education; DASH School Health Tools and Resources; The National Health Education Standards and Skills; and Summary.

Pre-service Education in Health Education

An important part of a successful IHE is whether or not it is accredited. An institution can become accredited through the National Council for Accreditation of Teacher Education (NCATE) or the Teacher Education Accredited Council (TEAC). Accreditation is important because it allows students to know that their education is going to provide them the necessities to succeed in their profession (NCATE, 2009).

IHEs play several crucial roles in preparing future school health educators (Joint Committee on National Health Education Standards, 2007). A primary responsibility of IHEs is to provide the tools necessary to pre-service educators, in-service educators, and school leaders to encourage the implementation of the National Health Education Standards (NHES) in pre-K-12 curriculum, instruction, and assessment. It is the responsibility of IHEs to have teachers prepared to teach health education at the elementary, middle, and high school levels that meet the recommended competencies as

well as coordinate promotion of the NHES in pre-K-12 with state and local education agencies.

IHEs can help put the NHES into practice by taking steps that are prearranged by the six Principles of Access and Equity (Joint Committee on National Health Education Standards, 2007). The six Principles of Access and Equity include: environment and climate, teaching, curriculum, assessment, technology, and learning. These principles require different steps for successful implementation of the NHES at IHE and are all equally important to accomplish. These principles are a guide to efficiently putting the NHES into practice. An important part to NHES implementation is being trained on the NHES. Together, the principles and the NHES rely on IHEs pivotal role in creating future health education teachers that are readily able to apply the NHES in future curricula.

A key question that needs to be answered is what is happening or should be happening at IHEs for students in pre-service education programs? At the secondary level, health courses are ideally taught by a “certified” teacher in health education who has received education from a university that prepares students to teach health education. According to a recent study there are a variety of challenges that pre-service education programs face (Smith, Potts-Datema, & Nolte, 2005). Those challenges include inadequate scholarly and professional preparation of teacher candidates, the quality of available candidates, the need for in-service teachers, the development and improvement of faculty needs, and inadequate directions regarding future development through research in the field (Smith, Potts-Datema, & Nolte, 2005).

The goal of K-12 comprehensive school health education (CSHE) is to help students adopt and maintain health behaviors (Joint Committee on National Health Education Standards, 2007). There are a variety of things that students need in order to be successful in living a healthy lifestyle. Research indicates that students need lessons that are developmentally and culturally appropriate (Frauenknecht, 2003). Lessons taught by well-prepared teachers will help students develop the appropriate skills and behavior through the attainment of basic knowledge, practice and application of skills in a sufficient amount of time. Furthermore, a major challenge to providing high-quality school health instruction lies in the lack of high-quality teacher preparation education (Peterson, Cooper, & Laird, 2001). To achieve this goal, well-prepared teachers must deliver developmentally appropriate instructional strategies that teach functional knowledge and essential skills for a sufficient duration (Joint Committee on National Health Education Standards, 2007). Quality health education teacher preparation programs are needed to train well-prepared health education teachers. Poor teacher preparation is a barrier to implementing high-quality school health instruction (Peterson, Cooper, & Laird, 2001). Comprehensive school health education has been labeled as an essential element as part of the nation (Frauenknecht, 2003). Advocacy campaigns have occurred for more secondary schools providing school health education that have the primary goal to prevent a variety of youth health problems, including unintentional and intentional injury and death; tobacco, alcohol, and other substance use and addiction; sexual behaviors; unhealthy dietary patterns; and lack of physical activity (Frauenknecht, 2003). Additionally, effective teachers are needed in CSHE to help prevent and eliminate health problems in young people.

Interestingly, Peterson, Cooper, and Laird (2001) found that trainings on educational topics are attended by only one-third of in-service teachers. According to Airhihenbuwa et al. (2005), the future of health education begins with the preparation and development of pre-service health education programs.

Division of Adolescent and School Health (DASH)

In 1988, the Division of Adolescent and School Health (DASH) was created within the National Center for Chronic Disease Prevention and Health Promotion (CDC, 2007e) of the Centers for Disease Control and Prevention (CDC). The purpose of DASH is to make it possible for children and adolescents to become adults who lead healthy and productive lives. DASH does this by advocating and promoting the health and well-being of children and adolescents (CDC, 2009a). DASH uses four main strategies nationally to promote school health: (a) identifying and monitoring six groups of risky health behaviors which include unintentional injuries and violence, tobacco use, alcohol and other drug use, sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection, unhealthy dietary behaviors, and physical inactivity, (b) working together to apply findings from research in advocating and promoting healthy behaviors in young people, (c) helping strengthen school health programs through funding, and (d) assisting in the assessment process of school health programs, policies, training and curricula (CDC, 2008c). Over the years, DASH has worked to develop and incorporate a variety of materials and tools to improve school health education such as the (a) Characteristics of Effective Health Education Curricula, (b) the Health Education Curriculum Analysis Tool, (c) the Youth Risk Behavior Survey,

(d) Student Health and Academic Achievement, and the (e) School Health Index.

Although these tools were created to help K-12 schools improve their comprehensive school health education programs, Institutions of Higher Education that have pre-service school health education programs need to know how to instruct their teacher candidates on effectively using these tools.

Characteristics of Effective Health Education Curricula

The Characteristics of Effective Health Education Curricula were identified by the Centers for Disease Control and Prevention, Division of Adolescent and School Health (CDC-DASH) (CDC, 2007a). These common characteristics were synthesized after a review of health education curricula and program evaluation studies that had a positive impact on the health practices of program participants. The characteristics include (CDC, 2007a):

Focus on specific behavioral outcomes – This characteristic can best be described as having alignment between health-related goals and behavioral outcomes. Learning activities should be used to guide and develop the healthy behavioral outcomes.

Is research-based and theory-driven – This characteristic can best be described as an approach to influencing healthy behavior through the use of theory in practice (such as the Theory of Planned Behavior).

Address individual values and group norms that support health-enhancing behaviors – This characteristic can best be explained by reinforcing beliefs and values that are health-enhancing, correcting inaccurate social and peer norms, and evaluating the amount of risk-taking behavior among peers.

Focus on increasing the personal perception of risk and harmfulness of engaging in specific health risk behaviors, as well as reinforcing protective factors – This

characteristic can best be explained as an assessment of vulnerability to, actual risk of, and exposure to unhealthy risky behaviors and situations. Also, there is the chance to confirm health enhancing beliefs, intentions, and behaviors through practice.

Address social pressures and influences – This characteristic can best be depicted as students are attending to the pressures of participating in risky behaviors associated with outside influences such as media, peer pressure, and social barriers.

Build personal and social competence – This characteristic can best be described as students are practicing and developing the skills needed to enhance their health through a predetermined arrangement of steps including talking about the magnitude of the skill, its significance, and the bond to other learned skills. The steps are demonstrated for the skill that is to be developed, showing the steps for the skill to be developed, providing a mock-up of the skill to be learned, using real-life situations to carry out and go over the skill, and by supplying reinforcement and feedback about the skill.

Provide functional health knowledge that is basic, accurate, and directly contributes to health-promoting decisions and behaviors – This characteristic is best described as offering accurate, reliable, and credible information not for simply improving on knowledge but for practices that the students can continue to use throughout their lifetime.

Use strategies designed to personalize information and engage students – This characteristic is best explained by providing teaching activities that address important health-related concepts, encouraging the full creativity and expression, sharing thoughts,

feelings, and opinions that are personal, and extending and expanding critical thinking skills.

Provide age-appropriate and developmentally appropriate information, learning strategies, teaching methods, and materials – This characteristic is best described as having suitable transitions from one skill and concept to the next that are pertinent and germane to the daily lives of the students.

Incorporate learning strategies, teaching methods, and materials that are culturally inclusive – This characteristic is best described as developing the intercultural connections and communications through culturally inclusive, diverse, and bias-free materials.

Provide adequate time for instruction and learning – This characteristic is best described as offering appropriate amounts of time for health-related concepts and skills to be developed.

Provide opportunities to reinforce skills and positive health behaviors – This characteristic is best described as allowing previously learned skills additional chances to develop and grow across health content areas and grade levels.

Provide opportunities to make connections with other influential persons - This characteristic can best be described as improving on protective factors by making connections between students and other influential people to participate in healthy behaviors.

Include teacher information and plans for professional development and training to enhance effectiveness of instruction and student learning - This characteristic can best

be described by teachers having the knowledge, skills, interests, comfort and belief through professional ongoing practice.

Health Education Curriculum Analysis Tool

The Health Education Curriculum Analysis Tool (HECAT) was recently developed by DASH (CDC, 2008b). The HECAT is used to assess health education curricula within school districts and can be used by education agency staff members at the state, regional, and local levels working together as a team or committee.

The foundation of the HECAT is based on the National Health Education Standards and the Characteristics of Effective Health Education Curricula. A health education curriculum is defined by having: a set of learning outcomes related to adopting and maintaining health-related knowledge, attitude, and skills; lessons that are developmentally appropriate and continuous from one to another; inclusion of content and materials that will be used to assist the teacher and help the students achieve specific learning outcomes and strategies in assessing student learning (CDC, 2007d). Currently, the HECAT has 9 modules that include; alcohol and other drugs; healthy eating; mental and emotional health; personal health and wellness; physical activity; safety; sexual health; tobacco; and violence (CDC, 2008c).

Results from using the HECAT can be used to strengthen a health education curriculum (CDC, 2007c). The HECAT can help strengthen a health education program by selecting or developing the most suitable and valuable curricula for the program.

Also, the HECAT will provide results necessary to improve the current curriculum being

used. Finally, the way health education instruction is delivered can be improved based on the results of the HECAT.

Pre-service students can use the HECAT during their methods and student teaching field experiences. The different topics in the HECAT can be used as a foundation for developing unit plans by pre-service students. First, a pre-service student will determine the topic they are going to teach and review the module in the HECAT. Then, based on grade level, pre-service school health education students will determine which National Health Education Standards and sub-skills they want their students to achieve after teaching the unit. The next step is to start developing the unit plan. Overall, the HECAT is a valid tool that can be used by pre-service health education students to develop effective unit plans.

The Youth Risk Behavioral Survey (YRBS)

The YRBS was developed in 1990 by CDC and has been conducted at high schools biennially since 1991 (CDC, 2008c). The YRBS is given to a random sample of ninth through twelfth grade students in public and private schools in the United States. The surveys from the YRBS include national, state, territorial, tribal and local school-based data that is representative of each jurisdiction (CDC, 2009b). The YRBS is designed to track the health risk behaviors that contribute to the leading causes of death, disability and social problems among youth and adults in the United States. The behaviors surveyed in the YRBS include: tobacco use, unhealthy dietary behaviors, inadequate physical activity, alcohol and other drug use, sexual behaviors, and unintentional injuries and violence. In addition, the YRBS provides data on the prevalence of obesity and asthma and general health status of adolescents. The YRBS is

a tool that provides primary data for youth at different levels (Kann, 2001). The findings from different subgroups such as gender and race/ethnicity can help pre-service teachers identify the risky health behaviors among youths that are in need of education and service (Kann, 2001). For example, YRBS data were used to fund a prevention program for teens in Louisiana (Kann, 2001). The aforementioned program was able to occur because the data from the YRBSS was used to reduce a specific priority health-risk behavior by making a program change.

The YRBS is a tool that pre-service school health education teachers should know about. The YRBSS monitors data that can be used in preventing the leading causes of morbidity and mortality among the students they teach (CDC, 2008h). Moreover, preventing death is important during the adolescent years because this is a time when many health-risk behaviors are established. The results from the YRBSS can be used by pre-service school health education teachers to reduce risk and improve health outcomes among their students (CDC, 2008h). This is important because it will help achieve the goals for *Healthy People 2010*. Additionally, the data can be used by school health education teachers to modify school health education curricula, and to advocate for health education (CDC, 2008h). It is for these reasons that pre-service school health education teachers should know about the YRBSS.

The School Health Index (SHI)

The SHI was developed through the collaborative efforts of the CDC, school administrators and staff, school health experts, parents, and national nongovernmental health and education agencies (CDC, 2008d). The SHI is a needs assessment tool used to improve the health and safety policies and programs at schools by helping them

recognize the strengths and weaknesses in their school health programs. It also helps schools develop an improvement plan based on their identified strengths and weaknesses (Fisher et al. 2003). The SHI is arranged according to the CDC's coordinated school health program (CSHP) and its eight components. These eight components include: school health and safety policies and environment, health education, physical education and other physical activity programs, nutrition services, health services, counseling, psychological, and social services, health promotion of staff, and family and community involvement. Based on a study by Brener et al. (2006), not enough schools address all the key recommendations in the eight components included in the SHI. The researchers found that schools need to develop and use a more coordinated health approach when trying to improve their school health programs (Brener et al. (2006).

Based on the research of Staten et al. (2005), after completing the SHI schools usually make at least one abrupt change to their school environment. Typically there are barriers to implementing the changes indicated by completing the SHI, such as staff turnover, low morale, insufficient amount of time, financial limitations, unreliable administrator support and too few resources (Pearlman, Dowling, Bayuk, Cullinen, & Thacher, 2005; Staten et al., 2005). However, the SHI recommendations can be achieved through the assistance of a positive external coordinator and certified health and physical educators (Staten et al., 2005). A school participating in the SHI analysis will benefit from using an external coordinator to direct it (Austin et al., 2006). The external coordinator may provide more demanding and more complex responsibilities with more cooperation and teamwork with all the team members involved (Austin et al., 2006). Additionally, the external coordinator needs to keep the SHI recommendations a high

priority in the minds of the school officials throughout the SHI assessment, and keep the SHI team systematically engaged throughout the entire process (Austin et al., 2006). Finally, after completing the SHI, the SHI team may realize their path to implementation resulted in the correct final destination in which it intended in the first place (Sherwood-Puzzello, Miller, Lohrmann, & Gregory, 2007).

Additionally, for the SHI to be used correctly it is important for pre-service school health education students to learn about the SHI. The SHI helps to promote health and safety behaviors for youth. The results from the SHI can improve students' learning capacity, increase school attendance, and improve physical fitness and mental health. Therefore, it is important for pre-service students to be educated about the SHI because it will have a positive impact on the overall health of their future students and their future productivity in the workforce, which will help to lower health care costs.

Health and Academics

The CDC's DASH has recently started to focus on the relationship between health and academic achievement. The reason for this focus has been to jump start research identifying the relationship between academic success and the health of our schools' students (CDC, 2009a). Currently, there are a variety of health-related factors and health-risk behaviors that have an impact on academics (CDC, 2009). We need to further clarify what are those things that impact students' academic achievement? This section will help to explain some of those associations.

A variety of studies have shown a connection between student diet or nutritional status and academic achievement. Murraray et al. (2007) found that improvement in the food and nutritional services that are provided to students will help increase academic

achievement. Florence, Asbridge and Veugelers (2008) found that there is a strong correlation between the quality of a student's diet and academic achievement. More specifically, improving the nutritional services that can provide healthier foods to students may lead to better academic performances (Florence, Asbridge, and Veugelers, 2008). Moreover, Halterman, Kaczorowski, Aligne, Auinger and Szilagyi (2001) found that academic performance decreases when a student has an iron deficiency, which leads to anemia. Also, another positive link between nutrition and school performance is having a school breakfast program (Kleinman et al., 2002). Interestingly, school breakfast programs lead to higher attendance rates and less tardiness among students (Murphy et al., 1998). A result from the study by Alaimo et al. (2001) found that there were negative outcomes associated with food insufficiency and academics and psychosocial maturity. Additionally, the researchers found that there were lower math test scores, poorer interpersonal relationships and higher rates of suspensions with students who were undernourished.

Another area of concern and research has been on the correlation between overweight and obesity and students' academic achievement. According to the work of Datar, Sturm and Magnabosco (2004), there is a correlation between lower mathematics and reading scores in overweight children as compared to their non-overweight counterparts. A study by Falkner et al. (2001) found that obese girls were more likely to be held back a grade level. Schwimmer, Burwinkle, and Varni (2003) also found that overweight girls were more likely to complete fewer years of schooling. Additionally, obese girls and both obese and underweight boys were more likely to believe they were low achieving students (Falkner et al., 2001). Overweight and obese students were also

more likely to have higher rates of absenteeism and poorer grades in math and language when compared to their healthy counterparts (Schwimmer, Burwinkle, and Varni, 2003). Moreover, Falkner et al. (2001) found that there were higher rates of school dropout in obese boys when compared to their average weight counterparts.

Participation in physical activity and sports is another area that has been studied based on its relationship to academic performance. Field, Diego, and Sanders (2001) found that adolescent grade point averages were higher, there was less drug use, and more time involved in sports, less depression and more time spent with their parents as the level of student exercise increased. Interestingly, participation in sports and extracurricular activities showed a positive relationship with physical and mental benefits as well as psychosocial benefits (Harrison and Narayan, 2003). According to Harrison and Narayan (2003), students are more likely to spend time doing their homework if they participate in a sport and other extracurricular activities. Grade point averages were also higher in students who participated in high-exercise sports for more hours per week than those who did not participate in sports at all (Field, Diego, and Sanders, 2001). Sibley and Etnier (2003) found that physical activity has a positive short-term effect on concentration. Additionally, it has been found that mathematics and reading were significantly and positively affected for both boys and girls who participated in physical activity (Stevens, To, Stevenson & Lochbaum, 2008). Mathematic scores also have been shown to increase when the same students had more time to participate in physical activity (National Governors Association, 2000). Academic performance is positively influenced by a student's participation in physical activity (Casetlli et al., 2007). Moreover, an adolescent's overall fitness, aerobic capacity, and participation in vigorous

physical activity, as defined by *Healthy People 2010*, all have a positive impact on academic achievement and cognitive functioning (Castelli, Hillman, Buck, & Erwin, 2007; Grissom, 2005; Hillman, Castelli, & Buck, 2005; Sibley & Etnier, 2003).

Asthma is another area of research that has proven to affect academic achievement in schools. Currently, there is strong evidence that shows that the incorporation of health education and parental involvement has a positive impact on children who are asthmatic (Murray et al, 2007). Students with wheezing problems associated with asthma have been linked to limited abilities and impaired school performance (Yeatts and Shy, 2001). Interestingly, students who have physician-diagnosed asthma report that they miss one or more days of school because of wheezing (Yeatts, Shy, et al., 2001). Moreover, Rand et al. (2000) found that symptoms for asthma were linked to school absences and workdays lost.

There are also specific health related illnesses and/or conditions that affect the academic performance of students. One of those conditions is sleep, which can have an effect on a student's performance at school. Sadeh, Gruber, and Raviv (2003) found that if children are losing sleep, then their alertness will be reduced. Moreover, a study by Giannotti, Cortesi, Sebastiani and Ottaviano (2002) found that taking naps during an evening are associated with being more tired during the day, decreased attention span, poorer school performance, higher amounts of injuries, and greater emotional distress. Interestingly, increased depression and lower self-esteem are both associated with having less sleep over a period of time (Fredriksen, Rhodes, Reddy, and Way, 2004).

What is the correlation between health-risk behaviors such as the use of alcohol, tobacco, and other drugs and academic achievement? A study by Jeynes (2002) reported

that smoking cigarettes and being under the influence of alcohol, marijuana, and cocaine all have a negative impact on academic achievement. Also, students with a personal view of academic failure are more at risk to engage in alcohol, tobacco, and marijuana use than those with a personal view of being average or above average in school performance (Bergen, Martin, Roeger & Allison, 2005). Curricula that have offered interventions for substance use have been shown to improve student scores on the Comprehensive Test of Basic Skills (National Governors Association, 2000). According to Roebuck, French and Dennis (2004), marijuana users have higher truancy and dropout rates than those students who do not use marijuana.

Additional support is that student grade point averages have been shown to increase as a result of participation in life-skills classes (National Governors Association, 2000). Students with the option and opportunity to use school-based clinics at their schools have also shown a positive relationship between promotion to the next grade level and graduation, higher levels of attendance, and lower levels of tardiness (Murray et al., 2007). The literature clearly provides evidence supporting the incorporation of a coordinated school health program into a school, a concept that has been developed by the CDC (2008a).

Pre-service students should have knowledge about the relationship of health to academics. Research has shown that there are many correlations between a student's health and their academic success. Therefore, knowing about these barriers to academic success is important because it will give teachers a tool necessary to help their students succeed in the classroom.

The National Health Education Standards and Skills (NHES)

The NHES was first designed and published in 1995 (CDC, 2007b). The standards and skills were developed by the Joint Committee on NHES with the goal of assisting students in their acquisition of knowledge and skills to promote personal, family, and community health. The NHES is used by teachers, administrators, and policy makers distributing instructional resources, and for a foundation of the evaluation of student attainment and progress as well as providing appropriate expectations for health education (Joint Committee on National Health Education Standards, 2007). The NHES and performance indicators are what students should know and be able to achieve as a result of a quality health education program. There are eight standards, described in Figure 1 (CDC, 2007b). Each standard has a rationale statement and a performance indicator, which are organized by grade levels (Pre-K-Grade 2; Grades 3-5; Grades 6-8; and Grades 9-12) (CDC, 2007b). The standards are a framework for health education assessment and curriculum development (Van Reusen and Robinson, 1996). The standards enable students to become health literate through the attainment of a set of specific essential information they should know and skills they should be able to perform (Van Reusen and Robinson, 1996).

Beginning health education teachers should be able to put these standards into effective lessons that are significant in health content and based around skill development and acquisition (Frauenknecht, 2003). Also, the beginning teacher should have the skills necessary to teach lessons that facilitate student learning in the following skills: solving problems, making decisions, setting goals, communicating effectively, managing risks, accessing valid information, analyzing influences, and advocating for healthy practices.

Figure 1

National Health Education Standards and Skills

Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.

Standard 3: Students will demonstrate the ability to access valid information and products and services to enhance health.

Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.

Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.

Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.

Source: CDC, 2007b

Thus, pre-service education in health education should lay the foundation in several concepts: (1) the most current best practice including applying principles of child development in lesson planning; (2) establishing an environment conducive to learning; (3) engaging students in the learning process; (4) applying appropriate assessment techniques for diverse student groups; and (5) effectively communicating to students, parents, other school staff, and community stakeholders (Frauenknecht, 2003).

Summary

The purpose of this chapter was to provide a review of the literature regarding pre-service education in health, the materials and tools developed by the Division of Adolescent and School Health (DASH), and the National Health Education Standards. The various tools and materials from the DASH included in this chapter are the Youth Risk Behavior Surveillance System, the Characteristics of Effective Health Education Curricula, Health and Academic Performance, the School Health Index, the Health Education Curriculum Analysis Tool, and the School Health Education Resources web tool.

It is important to understand that IHEs play an important role in creating and developing effective school health educators (Joint Committee on National Health Education Standards, 2007). Future school health educators in the United States have a responsibility of not only educating but promoting the health behaviors of the nation's 56 million students who ultimately become health literate adults, able to make better health choices as consumers. Organizations like DASH have provided useful tools and materials that can be used to improve the health education that is being received by

students in schools across the United States (Joint Committee on National Health Education Standards, 2007).

Chapter Three

Methods

This chapter includes the following sections: Subjects, Instrument, Instrument Testing, Procedure, and Data Analysis.

Subjects

A database of lead school health education faculty at colleges and universities in the United States that have school health education teacher preparation programs was created using a three-step process. First, all of the colleges and universities that had a school health teacher preparation program that were listed in the Directory of Institutions were used as a starting point to create the database (American Association for Health Education, 2001). Second, all of the NCATE accredited undergraduate school health education programs were included (NCATE, 2009). Third, a search of university and college school health education programs on the internet was conducted. After the list was completed, phone calls were made to the various institutions of higher education to confirm both the existence of their school health education teacher preparation program and the programs' lead school health education faculty member. The total number of lead school health faculty of 225 was used for the study. An *a priori* power analysis was conducted for this study. Based on a total population of 225 faculty coordinators and a 50/50 split with regard to the practice of interest (i.e., it was assumed that approximately

50% of school health education faculty coordinators would report about their program's pre-service education curriculum), it was determined that responses from 143 lead school health faculty would be needed to make inferences about the total population with a sampling error of $\pm 5\%$ at the 95% confidence level (Price, Dake, Murnan, Dimmig, & Akpanudo, 2005; Raosoft, 2004).

Instrument

A four-page, 87-item questionnaire (Appendix A) was developed from a comprehensive literature review to examine participants' pre-service educational practices in preparing school health education students. Specifically, items were designed to assess if the following topics were taught in school health pre-service programs: Youth Risk Behavior Surveillance System, School Health Policies and Programs Study, School Health Profiles Survey, Health and Academics, Characteristics of Effective Health Education Curriculum, Health Education Curriculum Analysis Tool, School Health Index, National Health Education Standards, and the CDC's School Health Education Resources. Demographic and background items were included for descriptive purposes (e.g., level of educational attainment, academic rank, and number of year(s) taught full time at the college/university level).

Instrument Testing

Stability (test-retest) reliability was evaluated based on the responses of a sample of the respondents from the first wave mailing. Pearson product-moment correlation coefficients (r) were used to evaluate the test-retest reliability of the items covering time on the survey. As presented in Table 1, a very strong positive relationship ranged from +0.70 or higher, a strong relationship ranged from +0.40 to +0.69, a moderate positive

relationship ranged from +0.30 to +0.39, a weak positive relationship ranged from +0.20 to +0.29, and no relationship or negligible relationship ranged from +0.01 to +0.19. All of the items from the section on how much class instruction time was taught showed a strong positive relationship to a very strong positive relationship. The HECAT (0.477) had the lowest score in this section, and Profiles (0.999) had the strongest positive relationship.

Stability reliabilities were calculated for the pre-service health education teaching areas using a percent agreement on the convenience sample responses ($n=8$) to the test-retest survey (Table 2). The highest average percent agreement for a topic covered in the survey was the YRBSS items at 97%. The lowest average percent agreement for a topic covered in the survey was the SHPPS items at 63%.

A literature review was used to establish face validity of the questionnaire. The questionnaire was given to a panel of experts ($n=3$) for review to establish content validity (Appendix C). Based on their review, minor revisions were made to the instrument.

Table 1

Stability Reliability Analysis of Survey Instrument using
Pearson product-moment correlation coefficients

Survey Item	<i>r</i>
If the topic is taught, how much class instruction time is spent on this topic?	
YRBS	0.67
Profiles	0.99
SHPPS	0.85
Characteristics	0.88
NHES	0.91
H & A	0.59
SHI	0.73
HECAT	0.48
SHER	0.97

r = Pearson product moment correlation coefficient

Table 2
Stability Reliability Analysis of Survey Instrument using
Percent Agreement

Survey Item	% agreement
Does your program for pre-service health education students include education about:	
YRBS	100%
Profiles	85.7%
SHPPS	63%
Characteristics	100%
NHES	100%
H & A	88%
SHI	88%
HECAT	88%
SHER	88%
Average	89%
YRBS	
Results and trends from the YRBSS	100%
General information about the YRBSS	88%
How to use YRBSS data	100%
How to advocate using YRBS data	100%
Average	97%
Profiles	
Results and trends from the Profiles	88%
General information about the Profiles	88%
How to use Profiles data	63%
Average	80%

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Table 2

Stability Reliability Analysis of Survey Instrument

Survey Item	% agreement
SHPPS	
Results and trends from the SHPPS	63%
General information about the SHPPS	63%
How to use SHPPS data	63%
Average	63%
Characteristics of Effective Health Education Curricula	
Describe the Characteristics	100%
How to apply the Characteristics	88%
Average	94%
NHES	
Describe NHES	100%
How to incorporate NHES standards and performance indicators	88%
How to align standards, curriculum and assessment	100%
Average	96%
H & A	
The Research on the relationship between H & A	88%
How to use the summary of research between H & A	88%
Average	88%
SHI	
The purpose of the SHI	88%
How to conduct a needs assessment using the SHI	88%
How to use SHI results to create healthy changes in the school	75%
Average	84%

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Table 2

Stability Reliability Analysis of Survey Instrument

Survey Item	<i>% agreement</i>
HECAT	
The purpose of the HECAT	88%
How to analyze a health education curriculum using the HECAT	88%
How to use HECAT results	88%
Average	88%
SHER	
Using SHER to conduct a search	88%
Average	88%

Procedure

The University of Toledo Institutional Review Board (IRB) application forms and approval (Appendix B) was completed prior to contacting participants. First, prenotification via electronic-mailing was sent to all potential respondents notifying them of the survey that was being sent to them. Second, potential respondents were contacted by postal mail. A two-wave mailing procedure was used to ensure an adequate response rate. The first wave mailing included: an introduction to the study and the request of the recipient's confidential and anonymous participation via a hand-signed, personalized cover letter, a copy of the 4 page color printed booklet survey instrument, an incentive for participation of \$1.00 was included, and a return envelope addressed to the principal investigator with a first-class postage stamp. For those who did not respond to the first wave mailing, a second wave mailing was sent out to the remaining potential respondents. The second wave mailing consisted of a revised cover letter, another copy of the survey, and a self-addressed stamped return envelope. The return of the completed survey served the purpose of implied consent. Finally, surveys were also distributed to participants at a professional conference for school health education higher education faculty, collected and entered for data analysis.

Data Analyses

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) 16.0 for Windows from the Institutes of Higher Education Pre-Service School Health Education Practices Questionnaire. The following analyses were performed: descriptive statistics, t-tests, analyses of variance, and Pearson product moment correlation coefficients.

Descriptive statistics (percentages, means, and standard deviations) were calculated to describe the respondents and their answers to the questionnaire. Next, analyses were made for the following independent variables: IHEs who offer a major and those who offer only a minor in health education, accreditation status (accredited versus non-accredited), the number of full time health education faculty, and the number of required field experience hours. The dependent variables were the amount of time spent teaching the following topics: YRBSS, Profiles, SHPPS, Characteristics of Effective Health Education Curriculum, NHES, H & A, SHI, HECAT, and SHER. Continuous variables were analyzed using independent sample t-tests or ANOVAs. Level of significance was set *a priori* at $p \leq .05$.

Chapter 4

Results

This chapter contains the following sections: Response Rate, Demographics and Background Characteristics of Participants, State of the Practice in Pre-service Health Education, Testing the Research Questions and Hypotheses, and Summary.

Response Rate

Surveys were mailed to 225 lead school health faculty at Institutions of Higher Education. The number of surveys that were obtained and were completed was 134, for a response rate of 59.5%.

Demographics and Background Characteristics of Participants

The demographics and background characteristics of respondents are shown in Table 3. The majority of respondents were female (67.9%) and had a Ph.D. or equivalent (76.9%) as their highest level of education. A plurality of respondents had the academic rank of associate professor (29.9%). The majority of the lead school health faculty was tenured (56.0%). Additionally, a majority of the respondents had a state license/certification to teach health education (62.7%). There was more lead school health faculty who belonged to a health education professional organization (83.6%) than those who did not (15.7%).

Table 3

Demographics and Background Characteristics of Participants	
Item	N (%)
What is your gender?	
Male	43 (32.1)
Female	91 (67.9)
What is your highest level of education?	
Masters	30 (22.4)
Ph.D. or equivalent	103 (76.9)
In which degree did you major in health education?	
Bachelor's	67 (50.0)
Master's	73 (55.2)
Ph.D. or equivalent	67 (50.0)
What is your academic rank?	
Lecturer/Instructor	21 (15.7)
Assistant Professor	37 (27.6)
Associate Professor	40 (29.9)
Professor	33 (24.6)
Other	3 (2.2)
Are you a tenured faculty member?	
Yes	75 (56.0)
No	35 (26.1)
Working toward tenure	23 (17.2)
Do you currently (or have you in the past) have a state license/certification to teach health education?	
Yes	84 (62.7)
No	49 (36.6)
Do you belong to any health education professional organizations?	
Yes	112 (83.6)
No	21 (15.7)

(Continued on next page)

Table 3 (continued)

Demographics and Background Characteristics of Participants	
Item	N (%)
Is your school health education program accredited?	
Yes	110 (82.1)
No	20 (14.9)
Does your college/university offer a:	
A. Stand alone school health education major?	
Yes	70 (52.2)
No	62 (46.3)
B. School health education minor?	
Yes	66 (49.3)
No	63 (47.0)
Does your university/college have a dual health and physical education program?	
Yes	65 (48.5)
No	67 (50.0)
Do you or one of your school health colleagues supervise health education student teachers?	
Yes	101 (75.4)
No	28 (20.9)

N = 134

Note: May not add to 100% due to non response

A majority of the school health programs were NCATE/TIAC accredited institutions (82.1%). Most of the institutions offered a stand alone school health education major (52.6%). Additionally, a plurality of the institutions offered a stand alone school health education minor (49.3%). In addition, half offered a dual health and physical education program (50.0%). A majority (75.4%) of the school health faculty supervise their own health education student teachers.

State of the Practice in Pre-service Health Education

Surveillance Tools

Several items were used to query faculty at IHEs with pre-service school health education programs regarding the concepts/skills taught to their students about the YRBSS and Profiles (Table 4). A majority of the respondents (79.9%) taught about the results and trends from the YBRSS when describing adolescent health behaviors. Moreover, a majority of the respondents (80.6%) taught about general information regarding the YRBSS and a majority (67.9%) taught about using the YRBSS data to help promote healthy norms among middle and high school students. Finally, a majority of respondents (67.2%) taught their students how to advocate for school programs using YRBS data.

Interestingly, about one-third of the respondents (32.1%) taught about the results and trends from the Profiles to describe school health policies and programs. Less than half of the respondents (42.5%) provided general information about the Profiles (e.g., purpose, methods, etc.) and less than one-third of respondents (30.6%) taught how to use Profiles data to advocate for improved school health education programs and policies.

Table 4

Surveillance Tools

Item (yes)	N (%)
Does your program teach about:	
YRBSS	
Results and trends from the YRBSS to describe adolescent health behaviors	107 (79.9)
General information about the YRBSS	108 (80.6)
How to use YRBS data to help promote healthy norms among middle and high school students	91 (67.9)
How to advocate for school programs using YRBS data	90 (67.2)
Does your program teach about:	
Profiles	
Results and trends from the Profiles to describe school health policies and programs	43 (32.1)
General information about the Profiles	57 (42.5)
How to use Profiles data to advocate for improved school health programs and policies	41 (30.6)

N = 134

Note: May not add to 100% due to non response

Coordinated School Health Program Tools

Several items were used to query faculty IHEs with pre-service school health education programs about the concepts/skills taught to their students related to the SHPPS and the SHI (Table 5). A plurality of the respondents (47.8%) taught about the results and trends from the SHPPS to describe school health policies and programs in schools in the United States. However, just over half (56.7%) of the IHEs with pre-service health education program taught general information about the SHPPS (purpose, methods, etc.) and less than half of the respondents (40.3%) taught about using the SHPPS data to advocate for improved school health programs and policies.

More than half of the respondents (59.0%) taught about the purpose of the SHI but, less than half (39.6%) taught about conducting a needs assessment using the SHI. Also, less than half of the respondents (38.1%) taught about using the SHI results to create healthy changes in the school.

Curriculum Tools

Several items were used to query faculty of IHEs with pre-service school health education programs about the concepts/skills taught to their students related to the Characteristics of Effective Health Education Curriculum, the NHES, H & A, the HECAT, and the SHER (Table 6). A majority of respondents (88.1%) from IHEs with pre-service school health education describe the Characteristics of Effective Health Education Curricula to their students. Additionally, the vast majority of the respondents (88.1%) teach their students how to apply the Characteristics of Effective Health Education Curricula in a school health education setting.

Table 5

Coordinated School Health Program Tools

Item (yes)	N (%)
Does your program teach about:	
SHPPS	
Results and trends from the SHPPS to describe school health policies and programs	64 (47.8)
General information about the SHPPS	76 (56.7)
How to use SHPPS data to advocate for improved school health programs and policies	54 (40.3)
SHI	
The purpose of the SHI	79 (59.0)
How to conduct a needs assessment using the SHI	53 (39.6)
How to use SHI results to create healthy changes in the school	51 (38.1)

N = 134

Note: May not add to 100% due to non response

Table 6

Curriculum Tools

Item (yes)	N (%)
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Does your program teach about:**Characteristics of Effective Health Education Curriculum**

Describe the Characteristics of Effective Health Education Curricula 118 (88.1)

How to apply the Characteristics of Effective Health Education Curricula in a school health education setting 118 (88.1)

National Health Education Standards (NHES)

Describe the NHES standards, performance indicators, skills, and sub-skills 120 (89.6)

How to incorporate NHES standards and performance indicators in health education curriculum and instruction 115 (85.8)

How to align standards, curriculum and assessment 114 (85.1)

Health and Academic Achievement (H & A)

The research on the relationship between H & A 83 (61.9)

How to use the summary of research between H & A to advocate for improved school health programs and policies 69 (51.5)

(Continued on next page)

Table 6 (continued)

Curriculum Tools	
Item (yes)	N (%)
Does your program teach about:	
Health Education Curriculum Analysis Tool (HECAT)	
The purpose of the HECAT	60 (44.8)
How to analyze a health education curriculum using the HECAT	44 (32.8)
How to use HECAT results to improve a health education curriculum	41 (30.6)
CDC's School Health Education Resources (SHER) web tool	
Using SHER to conduct a search for CDC school health education resource	57 (42.5)

N = 134

Note: May not add to 100% due to non response

The NHES standards, performance indicators, skills, and sub-skills were taught at a majority (89.6%) of IHEs with pre-service school health education programs. Also, a majority of respondents (85.8%) taught how to incorporate the NHES standards and performance indicators in health education curriculum and instruction and (85.1%) said that they teach how to align the standards, curriculum, and assessment.

More than half of the respondents (61.9%) reported that they taught about the research on the relationship between health and academic performance. Interestingly, slightly more than half of the respondents (51.5%) taught about using the summary of research between health and academic performance to advocate for improved school health programs and policies.

Less than half (44.8%) of the respondents taught about the purpose of the HECAT and only 32.8% taught how to analyze a health education curriculum using the HECAT. Also, less than one-third of the respondents (30.6%) taught about how to use the HECAT results to improve a health education curriculum. Finally, less than half of the respondents (42.5%) did not use the SHER to conduct a search for CDC school health education resources.

Assignments and Projects

A variety of projects were reported by the respondents when teaching about the YRBSS at IHEs. The main projects that were reported were incorporating the YRBSS results into lesson plans and in-class activities, using it for a needs assessment, planning a program, and identifying health risks.

A variety of projects were reported by the respondents when teaching about the Profiles at IHEs. The main projects that were reported while using Profiles were comparing results with school districts and states, and using Profiles as a tool to facilitate a class discussion.

Several different projects were reported by the respondents when teaching about the SHPPS at IHEs with a school health education program. The main projects that were reported while using SHPPS are incorporating the SHPPS results in a research paper and discussing the results in class.

The main projects that were reported while using Characteristics of Effective Health Education Curriculum are incorporating them into lesson plan and unit plan development, and doing a research project. Surprisingly, only one main project was reported by the respondents when teaching about the NHES at IHEs, which was using them in unit and lesson plan development and design.

A variety of projects were reported by the respondents when teaching about H & A at IHEs. The main projects that were reported for using H & A were reading and writing reflections, reviewing case studies, having in-class discussions, and advocating for the justification of a program.

Several different projects were reported by the respondents when teaching about the SHI at IHEs. The main projects that were reported while using SHI were completing mock SHIs and using the results to write up an advocacy letter for change in a school, and using the SHI to help conduct interviews at schools.

A variety of projects were reported by the respondents when teaching about the HECAT at IHEs. The main projects that were reported while using HECAT were creating in-class activities, writing research papers, and using the HECAT to identify content that is needed in lesson plans.

Several different projects were reported by the respondents when teaching about the SHER at IHEs. The main projects that were reported while using SHER were using it as an internet searching guide/tool, and finding and locating valid health information for lessons.

Testing the Research Questions and Hypotheses

Answers to the research questions and hypotheses are reported in this section. An accepted or rejected response will be determined for the null hypotheses via the data analysis performed.

Research Question 1

Do faculty in institutes of higher education (IHE) with pre-service school health education programs teach about the Youth Risk Behavior Surveillance System (YRBSS)?

Hypothesis 1.1

The majority of institutes of higher education with pre-service school health education do not offer education about the YRBSS.

The percentage of IHEs with pre-service school health education that did not offer education about the YRBSS was 18.5% thus, the hypothesis was rejected.

Hypothesis 1.2

There is no significant difference in the amount of time spent teaching about the YRBS between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about the YRBS and IHEs with a major in health education. A statistically significant difference was not found in the amount of time spent teaching about the YRBS and IHEs with a major in health education ($t = 0.110$, $df = 112$, $p = 0.91$). The null hypothesis was accepted.

Hypothesis 1.3

There is no significant difference in the amount of time spent teaching about the YRBS between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about the YRBS and NCATE/TIAC accredited IHEs and non-accredited IHEs. A statistically significant difference was not found in the amount of time spent teaching about the YRBS and NCATE/TIAC accredited IHEs and non-accredited IHEs ($t = 0.895$, $df = 110$, $p = 0.37$). The null hypothesis was accepted.

Hypothesis 1.4

There is no significant relationship between the amount of time spent teaching about the YRBS and the number of full time health education faculty.

A Pearson product moment correlation coefficients was calculated and determined that there was no significant relationship between the amount of time spent teaching about the YRBS and the number of full time health education faculty ($r = 0.115$, $p = 0.22$, $N = 112$). Therefore, the null hypothesis was accepted.

Hypothesis 1.5

There is no significant relationship between the amount of time spent teaching about the YRBS and the number of required field experience hours.

A Pearson product moment correlation coefficients was calculated and determined that there was no significant relationship between the amount of time spent teaching about the YRBS and the number of full time health education faculty ($r = .012$, $p = .91$, $N = 101$). Therefore, the null hypothesis was accepted.

Research Question 2

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the Characteristics of Effective Health Education Curriculum?

Hypothesis 2.1

The majority of institutions of higher education with pre-service school health education do not offer education about the Characteristics of Effective Health Education Curriculum.

The percentage of IHEs with pre-service school health education that did not offer education about the Characteristics of Effective Health Education curriculum was 6% thus, the hypothesis was rejected.

Hypothesis 2.2

There is no significant difference in the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum and IHEs. A statistically significant difference was not found in the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum and IHEs ($t = 0.480$, $df = 109$, $p = 0.63$). The null hypothesis was accepted.

Hypothesis 2.3

There is no significant difference in the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum and NCATE/TIAC accredited IHEs and non-accredited IHEs. A statistically significant difference was not found in the amount of time spent teaching about the Characteristics of Effective Health

Education Curriculum and NCATE/TIAC accredited IHEs and non-accredited IHEs ($t = 0.275$, $df = 107$, $p = 0.78$). The null hypothesis was accepted.

Hypothesis 2.4

There is no significant relationship between the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum and the number of full time health education faculty ($r = -0.075$, $p = 0.44$, $N = 107$).

Therefore, the null hypothesis was accepted.

Hypothesis 2.5

There is no significant relationship between the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about the Characteristics of Effective Health Education Curriculum and the number of full time health education faculty ($r = 0.045$, $p = 0.66$, $N = 98$).

Therefore, the null hypothesis was accepted.

Research Question 3

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the School Health Policies and Programs Study (SHPPS)?

Hypothesis 3.1

The majority of institutions of higher education with pre-service school health education do not offer education about the School Health Policies and Programs Study (SHPPS).

The percentage of IHEs with pre-service school health education that do not offer education about SHPPS was 38.1% thus, the hypothesis was rejected.

Hypothesis 3.2

There is no significant difference in the amount of time spent teaching about the SHPPS between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about SHPPS and IHEs with a major in health education. A statistically significant difference was not found in the amount of time spent teaching about SHPPS and IHEs ($t = 0.446$, $df = 111$, $p = 0.66$). The null hypothesis was accepted.

Hypothesis 3.3

There is no significant difference in the amount of time spent teaching about the SHPPS between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about SHPPS and NCATE/TIAC accredited IHEs and non-accredited IHEs. A statistically significant difference was found in the amount of time spent teaching about SHPPS and NCATE/TIAC accredited IHEs and non-accredited IHEs ($t = 2.00$, $df = 109$, $p = 0.05$). Those IHEs that were NCATE/TIAC accredited taught for an average of 79.84 minutes ($SD=137.9$) whereas those IHEs without NCATE/TIAC accreditation taught for an average of 14.2 minutes ($SD=31.1$). The null hypothesis was rejected.

Hypothesis 3.4

There is no significant relationship between the amount of time spent teaching about the SHPPS and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about SHPPS and the number of full time health education faculty ($r = -0.025$, $p = 0.79$, $N = 111$). Therefore, the null hypothesis was accepted.

Hypothesis 3.5

There is no significant relationship between the amount of time spent teaching about the SHPPS and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent

teaching about SHPPS and the number of full time health education faculty ($r = -0.035$, $p = 0.73$, $N = 100$). Therefore, the null hypothesis was accepted.

Research Question 4

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the School Health Profiles Survey (Profiles)?

Hypothesis 4.1

The majority of institutions of higher education with pre-service school health education do not offer education about the Profiles.

The percentage of IHEs with pre-service school health education that did not offer education about the Profiles was 57.5% thus, the hypothesis was accepted.

Hypothesis 4.2

There is no significant difference in the amount of time spent teaching about the Profiles between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about Profiles and IHEs. A statistically significant difference was not found in the amount of time spent teaching about Profiles and IHEs with a major in health education ($t = 0.298$, $df = 114$, $p = 0.77$). The null hypothesis was accepted.

Hypothesis 4.3

There is no significant difference in the amount of time spent teaching about the Profiles between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference in the amount of time spent teaching about the Profiles and NCATE/TIAC between accredited IHEs and non-accredited IHEs. A statistically significant difference was not found in the amount of time spent teaching about the Profiles and NCATE/TIAC accredited IHEs and non-accredited IHEs ($t = 0.254$, $df = 113$, $p = 0.80$). The null hypothesis was accepted.

Hypothesis 4.4

There is no significant relationship between the amount of time spent teaching about the Profiles and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about Profiles and the number of full time health education faculty ($r = -0.032$, $p = 0.74$, $N = 114$). Therefore, the null hypothesis was accepted.

Hypothesis 4.5

There is no significant relationship between the amount of time spent teaching about the Profiles and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about Profiles and the number of full time health education faculty ($r = -0.008$, $p = 0.94$, $N = 103$). Therefore, the null hypothesis was accepted.

Research Question 5

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the National Health Education Standards (NHES)?

Hypothesis 5.1

The majority of institutions of higher education with pre-service school health education do not offer education about the NHES.

The percentage of IHEs with pre-service school health education that do not offer education about the NHES was 2.2% thus, the hypothesis was rejected.

Hypothesis 5.2

There is no significant difference in the amount of time spent teaching about the NHES between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about the NHES and IHEs.

A statistically significant difference was not found in the amount of time spent teaching about the NHES and IHEs with a major in health education ($t = 0.199$, $df = 107$, $p = 0.84$). The null hypothesis was accepted.

Hypothesis 5.3

There is no significant difference in the amount of time spent teaching about the NHES between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference in the amount of time spent teaching about the NHES and

NCATE/TIAC between accredited IHEs and non-accredited IHEs. A statistically significant difference was not found in the amount of time spent teaching about

the NHES and NCATE/TIAC accredited IHEs and non-accredited IHEs ($t = 0.652$, $df = 105$, $p = 0.52$). The null hypothesis was accepted.

Hypothesis 5.4

There is no significant relationship between the amount of time spent teaching about the NHES and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching on the NHES and the number of full time health education faculty ($r = 0.069$, $p = 0.49$, $N = 105$). Therefore, the null hypothesis was accepted.

Hypothesis 5.5

There is no significant relationship between the amount of time spent teaching about the NHES and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and it was determined that there was a statistically significant, weak positive correlation between the amount of time spent teaching on the NHES and the number of full time health education faculty ($r = 0.212$, $p = 0.04$, $N = 96$). Therefore, the null hypothesis was rejected.

Research Question 6

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about health status and academics?

Hypothesis 6.1

The majority of institutions of higher education with pre-service school health education do not offer education about Health Status and Academics.

The percentage of IHEs with pre-service school health education that did not offer education about Health Status and Academics was 37.3% thus, the hypothesis was rejected.

Hypothesis 6.2

There is no significant difference in the amount of time spent teaching about health status and academics between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about health status and academics in IHEs with a major in health education. A statistically significant difference was not found in the amount of time spent teaching about health status and academics in IHEs with a major in health education ($t = 1.620$, $df = 111$, $p = 0.11$). The null hypothesis was accepted.

Hypothesis 6.3

There is no significant difference in the amount of time spent teaching about health status and academics between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about health status and academics in NCATE/TIAC accredited IHEs and non-accredited IHEs. A statistically significant difference was not found in the amount of time spent

teaching about health status and academics in NCATE/TIAC accredited IHEs and non-accredited IHEs ($t = 0.182$, $df = 110$, $p = 0.86$). The null hypothesis was accepted.

Hypothesis 6.4

There is no significant relationship between the amount of time spent teaching about health status and academics and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and it was found that there was a statistically significant, weak positive correlation between the amount of time spent teaching about health status and academics and the number of full time health education faculty ($r = 0.275$, $p = 0.004$, $N = 109$).

Therefore, the null hypothesis was rejected.

Hypothesis 6.5

There is no significant relationship between the amount of time spent teaching about health status and academics and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and found that there was no significant relationship between the amount of time spent teaching about the health status and academics and the number of full time health education faculty ($r = 0.096$, $p = 0.35$, $N = 99$). Therefore, the null hypothesis was accepted.

Research Question 7

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the School Health Index (SHI)?

Hypothesis 7.1

The majority of institutions of higher education with pre-service school health education do not offer education about the SHI.

The percentage of IHEs with pre-service school health education that did not offer education about the SHI was 34.3% thus, the hypothesis was rejected.

Hypothesis 7.2

There is no significant difference in the amount of time spent teaching about the SHI between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference in the amount of time spent teaching about the SHI between IHEs with and those without a major in health education. A statistically significant difference was found in the amount of time spent teaching about the SHI between IHEs with and without a major in health education ($t = 2.048$, $df = 112$, $p = 0.04$). Those IHE's with a major taught for an average 86.9 minutes ($SD=108.7$) whereas those IHE's without a major taught an average of 49.4 minutes ($SD=79.3$). The null hypothesis was rejected.

Hypothesis 7.3

There is no significant difference in the amount of time spent teaching about the SHI between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about the SHI between NCATE/TIAC accredited and non-accredited IHEs. A statistically significant

difference was not found in the amount of time spent teaching about the SHI between NCATE/TIAC accredited and non-accredited IHEs ($t = 1.915$, $df = 112$, $p = 0.06$). The null hypothesis was accepted.

Hypothesis 7.4

There is no significant relationship between the amount of time spent teaching about the SHI and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and it was determined that there was a statistically significant, weak positive correlation between the amount of time spent on teaching SHI and the number of full time health education faculty ($r = 0.217$, $p = 0.02$, $N = 111$). Therefore, the null hypothesis was rejected.

Hypothesis 7.5

There is no significant relationship between the amount of time spent teaching about the SHI and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about the SHI and the number of full time health education faculty ($r = -0.110$, $p = 0.28$, $N = 99$). Therefore, the null hypothesis was accepted.

Research Question 8

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the Health Education Curriculum Analysis Tool (HECAT)?

Hypothesis 8.1

The majority of institutions of higher education with pre-service school health education do not offer education about the HECAT.

The percentage of IHEs with pre-service school health education that did not offer education about the HECAT was 50% thus, the hypothesis was accepted.

Hypothesis 8.2

There is no significant difference in the amount of time spent teaching about the HECAT between IHEs who offered a major and those who did not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference in the amount of time spent teaching about the HECAT and IHEs with and those without a major in health education. A statistically significant difference was not found in the amount of time spent teaching about the HECAT and IHEs ($t = 1.730$, $df = 112$, $p = 0.09$). The null hypothesis was accepted.

Hypothesis 8.3

There is no significant difference in the amount of time spent teaching about the HECAT between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference in the amount of time spent teaching about the HECAT and NCATE/TIAC accredited and non-accredited IHEs. A statistically significant

difference was not found in the amount of time spent teaching about the HECAT ($t = 1.389$, $df = 111$, $p = 0.17$). The null hypothesis was accepted.

Hypothesis 8.4

There is no significant relationship between the amount of time spent teaching about the HECAT and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and it was determined that there was a statistically significant, weak positive correlation between the amount of time spent teaching about the HECAT and the number of full time health education faculty ($r = 0.224$, $p = 0.02$, $N = 110$). Therefore, the null hypothesis was rejected.

Hypothesis 8.5

There is no significant relationship between the amount of time spent teaching about the HECAT and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about the HECAT and the number of full time health education faculty ($r = -0.019$, $p = 0.85$, $N = 99$). Therefore, the null hypothesis was accepted.

Research Question 9

Do faculty in institutions of higher education (IHE) with pre-service school health education programs teach about the CDC's School Health Education Resources (SHER) web tool?

Hypothesis 9.1

The majority of institutions of higher education with pre-service school health education do not offer education about the SHER.

The percentage of IHEs with pre-service school health education that did not offer education about the SHER was 43.3% thus, the hypothesis was rejected.

Hypothesis 9.2

There is no significant difference in the amount of time spent teaching about the SHER between IHEs who offer a major and those who do not offer a major in health education.

A t-test was calculated to determine if there was a statistically significant difference between the amount of time spent teaching about the SHER between IHEs with and those without a major in health education. A statistically significant difference was not found in the amount of time spent teaching about the SHER ($t = 0.326$, $df = 112$, $p = 0.75$). The null hypothesis was accepted.

Hypothesis 9.3

There is no significant difference in the amount of time spent teaching about the SHER between NCATE/TIAC accredited IHEs and non-accredited IHEs.

A t-test was calculated to determine if there was a statistically significant difference in the amount of time spent teaching about the SHER between NCATE/TIAC accredited and non-accredited IHEs. A statistically significant difference was not found in the amount of time spent teaching about the SHER ($t = 0.865$, $df = 111$, $p = 0.39$). The null hypothesis was accepted.

Hypothesis 9.4

There is no significant relationship between the amount of time spent teaching about the SHER and the number of full time health education faculty.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about the SHER and the number of full time health education faculty ($r = -0.108$, $p = 0.26$, $N = 110$). Therefore, the null hypothesis was accepted.

Hypothesis 9.5

There is no significant relationship between the amount of time spent teaching about the SHER and the number of required field experience hours.

A Pearson product moment correlation coefficient was calculated and determined that there was no significant relationship between the amount of time spent teaching about the SHER and the number of full time health education faculty ($r = .015$, $p = .88$, $N = 101$). Therefore, the null hypothesis was accepted.

Summary

There were nine hypotheses that were analyzed to determine if a majority of IHEs with pre-service school health education do not offer education about different topics surveyed including YRBS, Profiles, SHPPS, Characteristics of Effective Health Education Curriculum, NHES, health and academics, SHI, HECAT, and the SHER. Of the nine hypotheses, three were accepted and six were rejected. Overall, a majority of IHEs with pre-service school health education did not offer education about the HECAT and Profiles, whereas a majority offered education about the YRBS, SHPPS,

Characteristics of Effective Health Education Curriculum, NHES, health and academics, SHI, and the SHER.

There were nine hypotheses that were analyzed to determine if there was a significant difference in the amount of time spent teaching about the different topics surveyed and those IHEs who offered a major in health education and those IHEs who did not offer a major in health education. Of the nine hypotheses only one determined that there was a significant difference. There was a significant difference found in the amount of time spent teaching about the SHI and those IHEs who offered a major in health education and those who did not offer a major in health education.

Nine hypotheses were analyzed to determine if there were significant difference in the amount of time spent teaching about the different topics surveyed and those IHEs who were versus were not NCATE/TIAC accredited. Eight hypotheses found no significant differences. One hypotheses determined that there was a significant difference in the amount of time spent teaching about the SHPPS and those IHEs who were or were not NCATE/TIAC accredited.

There were nine hypotheses that were analyzed to determine if there was a significant relationship between the amount of time spent teaching about the different topics surveyed and the number of full time health education faculty. There were no significant differences for six of the hypotheses. There was a significant difference in the amount of time spent teaching about the HECAT, SHI, and health status and academics and the number of full time health education faculty.

Nine hypotheses were analyzed to determine if there was a significant relationship between the amount of time spent teaching about the different topics surveyed and the

number of required field experience hours. There was a significant difference found only in the amount of time spent teaching about the NHES and the number of required field experience hours.

Chapter 5

Discussion

This chapter includes the following sections regarding the research conducted: Summary and Recommendations.

Summary

Accreditation is important because it helps IHEs determine if they are teaching their students the concepts and skills needed to succeed in their profession (NCATE, 2009). However, there was no significant difference in the amount of time spent teaching about the YRBSS, Characteristics of Effective Health Education Curriculum, Profiles, NHES, health status and academics, SHI, HECAT, and the SHER between NCATE/TIAC accredited and non-accredited IHEs. Moreover, this study showed that there was no significant difference between NCATE/TIAC accredited IHEs and non-accredited IHEs and the amount of time spent teaching about health status and academics.

The SHI, HECAT, YRBSS, Characteristics of Effective Health Education Curricula, and student health and academic achievement are products that DASH has created to help improve school health education (CDC, 2008c). It is important for IHEs to know how to instruct their students on how to use these tools. This study found that the purpose of the SHI is taught at a majority (59.0%) of IHEs. However, less than of IHEs taught about conducting a needs assessment (39.6%) using the SHI or how to

use the results to create healthy changes in the school (38.1%). These findings are important to improving pre-service school health education programs because Fisher et al. (2003) found that the SHI can be used to strengthen a school by making an improvement plan based on its results.

A primary responsibility of IHEs is to provide the tools necessary to pre-service educators, in-service educators, and school leaders to encourage the implementation of the NHES in pre-K-12 curriculum, instruction, and assessment (Joint Committee on National Health Education Standards, 2007). Beginning health education teachers should be able to incorporate the NHES into effective lessons (Frauenknecht, 2003). The results from this study showed that a majority of IHEs with pre-service health education offered education about the NHES. A result from this study showed that a majority of IHEs (85.8%) were teaching about incorporating the NHES standards and performance indicators in health education curricula and instruction. Additionally, the study also found that a majority of IHEs (85.1%) were teaching how to align the standards, curricula and assessments.

The CDC's DASH has recently focused resources toward determining the relationship between health and academic achievement. Currently, there are a variety of health-related factors and health-risk behaviors that have an impact on academics (CDC, 2009). Results from this study found that a majority of IHEs (61.9%) taught about the relationship between health and academic achievement. More than half of IHEs (51.5%) taught about how to use the summary of research between H & A to advocate for improved school health programs and policies.

Results from using the HECAT can be used to strengthen a health education curriculum by selecting or developing the most suitable and valuable curricula for the program (CDC, 2007c). The HECAT also provides results necessary to improve the current curriculum being used. Finally, the way health education instruction is delivered can be improved based on the results of the HECAT. However, this study found that less than half of IHEs taught about the purpose of the HECAT (44.8.0%). Additionally, the results from this study show that less than half of respondents (30.6%) taught their students how to use the HECAT results to improve a health education curriculum. Also, less than half of the respondents (32.8%) taught their students how to analyze a health education curriculum using the HECAT.

According to Smith, Potts-Datema, & Nolte (2005), it is ideal for health education courses to be taught by a teacher who has been certified to teach that subject. This current study found that only 62.7% of the respondents had a license/certification to teach health education in their state. The question that should be asked is why is there not a higher percentage of IHE teachers with a license/certification teaching health education to pre-service school health education students?

Health education teachers have been shown to have a positive impact on the health of their students (Dent et al., 1995; Hawkins, et al., 1999; Coleman, et al., 2005). Additionally, it is important that the quality of education that health education teachers receive at IHEs be the most current and accurate information and skills. However, this study showed that less than half of IHEs taught their students about all of the tools surveyed in this study.

Recommendations

Based on the results of this study, there are several recommendations that can be made.

- Additional research needs to be conducted regarding how to get all of these various tools taught at all IHEs.
- Additional research needs to be conducted on why these various tools are or are not used at all IHEs with school health teacher preparation programs. This may help provide the basis for getting the tools incorporated at IHEs who do not already use them in their curriculum.
- Additional education may need to be provided to IHEs that provide a pre-service school health education program about incorporating these various tools into their curriculum.

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Appendix A

2009 Institutes of Higher Education Pre- Service School Health Education Practices Survey

Appendix B

University of Toledo Institutional Review Board Approval Letter

The University of Toledo
Department for Human Research Protections
Social, Behavioral & Educational Institutional Review Board
Office of Research, Rm. 2300, University Hall
2801 West Bancroft Street, Mail Stop 944
Toledo, Ohio 43606-3390
Phone: 419-530-2844 Fax: 419-530-2841
(FWA00010686)

To: Susan Telljohann, HSD, CHES and Brad Davidson
Department of Health and Rehabilitative Services

From: Barbara K. Chesney, Ph.D., Chair
Wesley Bullock, Ph.D., Vice Chair

Signed: Wesley A. Bullock, Ph.D. **Date:** April 2, 2009

Subject: IRB #106413
Title: **Institutes of Higher Education Pre-Service School Health Education Practices**

On 04/02/09, the above research was reviewed and approved as Exempt (category 2b) by the Chair and Chair Designee of the University of Toledo (UT) **Social Behavioral & Educational** Institutional Review Board (IRB). The requirement to obtain a signed consent/authorization for use and disclosure of protected health information form has been waived as this research is determined to be minimal risk and a signed consent/authorization document would be the only record linking the subject to the data. It was determined that this waiver for signed consent/authorization will not adversely affect the rights and welfare of the participants. This action will be reported to the committee at its next scheduled meeting.

Please Note: A consent form is not required for this study. However an Information Sheet regarding the study should be distributed to potential participants. This Information Sheet should include the name and telephone number of a contact person in case the subjects need additional information. It should state that participation is voluntary. It is also strongly encouraged that the study be explained verbally to potential subjects.

Items Reviewed:

- IRB Application Requesting Exempt Review
- Survey

Designated as EXEMPT RESEARCH on: 04/02/2009

Please read the following attachment detailing Principal Investigator responsibilities.