A Dissertation

entitled

Health Education in Charter Schools: A National Study

by

Lisa M. Ambrosetti

Submitted to the Graduate Faculty as partial fulfillment of the requirements for

the Doctor of Philosophy Degree in Health Education

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August 2012
An Abstract of

Health Education in Charter Schools: A National Study
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The purpose of this study was to assess the quantity and content of health education that is being taught in U.S. charter high schools. An additional purpose was to identify factors that are associated with teaching health education in charter high schools. Two theories, the Transtheoretical Model and the Health Belief Model were used to evaluate current status of health education in charter high schools.

A 24-item survey instrument was developed and distributed to a national random sample of 750 charter high schools across the United States. A directory of charter schools was obtained from the National Charter School Directory, managed by the Center for Education Reform. Schools from the thirty nine states with charter schools in 2009 and the District of Columbia were included in the random sample of schools. Schools at the high school grade level were included in the random sample. The survey was addressed to the attention of the person responsible for teaching health education or the school leader. A four-wave mailing process was used in an attempt to increase the response rate. The final response rate was 44%, with 300 of the 680 potential surveys returned.

The majority of respondents (81%) were in the maintenance stage and had been teaching health education for more than a year. The respondents can be described as
Caucasian (74.7%), female (51.3%), bachelor’s degree trained (82.3%), and having 5 or less years of teaching experience (35.7%). Less than a third of respondents (29.7%) identified themselves as health teachers and the majority (64.7%) had been with the current charter school less than 5 years. A little over one third (38.3%) of those teaching health education reported being licensed or certified to teach health education.

The majority of the charter schools had been open for ten years or less (66.3%), were located in an urban setting (49.4%), and identified their type of school as “core knowledge” (40.6%). Approximately two thirds of the charter schools reported having a state, district, or charter law requirement to teach health education.

Health education was reported as being most likely to be taught in ninth grade (66.9%) compared to twelfth grade (44.1%). The health topics most likely to be taught were physical activity and fitness (60.5%), body systems (45.8%), and alcohol/other drug use prevention (43.9%). Health education topics least likely to be taught were first aid/CPR (13.4%) and health care services (13.1%). Schools in states where charter school laws received a state rank of C, on a scale of A-F, by the Center of Education Reform, were most likely to invest time in teaching health education topics. The proportion of charter schools teaching the specific health skills identified in the National Health Education Standards was high, ranging from 62.7% to 86.1%. Approximately one third of respondents (34%) reported having no perceived barriers to teaching health education. When reported, lack of financial resources was the most common perceived barrier (26.7%). Only 1.7% of respondents identified no benefits to teaching health education, while more than half of the respondents selected at least four benefits from the survey item choices.
These findings suggest that charter schools are teaching health education and that schools with a district, state, or charter law health education policy are more likely to teach health education. Health and school professionals should still work with individual charter schools in developing sound health education curricula as this study did not measure the quality of the health education being taught, academic performance of students enrolled in health education courses and professional preparation and advancement of those teaching health education in charter schools.
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Chapter 1

Introduction

This chapter presents an overview of the importance of health education in schools along with the challenges and obstacles faced by charter schools when it comes to offering health education. The major sections of this chapter include: 1) Statement of the Problem; 2) Purpose of the Study; 3) Research Questions and Hypotheses; 4) Definition of Terms; and 5) Limitations and Delimitations of the Study.

Statement of the Problem

Improving the health of our children and adolescents is both a public health challenge and a priority. It is important to equip children and adolescents with the knowledge and skills necessary to establish patterns of behavior and lifestyle choices that enhance both their current and future health. The behaviors of children and adolescents are influenced at multiple levels: individual, peer, family, school, community, and societal. Considering that 95% of all American youth between the ages of 5 and 17 years are enrolled in school, schools have a central role in shaping the behaviors of youth. The average academic school day ranges from six to seven hours (not including before and after school programs and events). If schools do not offer sufficient and high quality health education, opportunities to promote and protect the health of youth are missed.

Each school day provides an opportunity for youth to learn about health concepts and to practice skills that promote lifelong healthy behavior. Unfortunately, health education is not always a requirement in schools. When it is required, the number of total hours of health instruction is often not sufficient. According to the 2006 School Health Policies and Programs Study (SHPPS), 74.5% of states have adopted a policy requiring
districts or schools to follow national or state health education standards or guidelines (Kann, Telljohann, & Wooley, 2007). According to SHPPS 2006 the majority of states (72%) were supportive of following guidelines specific to the National Health Education Standards. Even when there was a health education policy, only a small percent of states required students to be tested on health topics at the elementary (19.6%) and middle and high school (21.6%) grade levels. Of the fourteen selected health topics identified in SHPPS 2006, only 6.4% of elementary schools, 20.6% of middle schools and 35.8% of high schools were teaching all fourteen topics (Kann et al., 2007). The median number of hours of required health instruction on 11 of the 14 health topics taught increased from 17.4 hours in elementary school to 40.0 hours in high school (Kann et al., 2007).

A reason often cited for not including health education in the school curriculum is the concern that time invested in health education may take time away from meeting academic accountability goals, as outlined under the federal No Child Left Behind Act of 2001. Under the No Child Left Behind Act, public schools must submit student scores in core subjects such as reading and math to receive federal funding (U.S. Department of Education, 2003). Health education is not defined as a “core” subject and therefore, not included in the reporting requirements. Due to a federally mandated accountability system, schools place a greater emphasis on increasing the number of students passing proficiency tests in core subjects such as reading and math than on teaching health education.

**Charter Schools**

Like traditional public schools, charter schools are accountable for the academic success of their students. According to the Center for Education Reform, 465 new charter
schools opened during the 2010-2011 school year, increasing the number of charter schools to more than 5,000. Currently, charter schools serve more than 1.7 million children in 41 states and the District of Columbia (Center for Education Reform [CER], 2010b).

Charter schools are public schools independently operated from the public school system. Similar to traditional public schools, charter schools are held accountable for student scores on district-wide and state-wide proficiency tests. It is possible that charter schools, due to unique challenges, might be less likely than traditional schools to include health education in the school curriculum. Challenges unique to charter schools may include one or more of the following: deficient funding, staff retention, lack of school district support, and public opposition to the charter school movement. Charter schools may also be less likely than traditional public schools to offer health education because charter schools may request to waive school district requirements for teaching health education. The specifications and exemption application requirements vary by state.

**Significance of the Problem**

Health education in schools is important for the prevention of risk behaviors that lead to death and disability. The Centers for Disease Control and Prevention (CDC) has identified six critical risk behaviors of adolescents that contribute to the leading causes of death and disability among youth and adults. These six risk behaviors include injury and violence, alcohol and other drug use, tobacco use, risky sexual behaviors, unhealthy dietary behaviors, and physical inactivity (Center for Disease Control and Prevention [CDC], 2010c). According to the 2009 Youth Risk Behavior Survey (YRBS), injury and violence are the leading causes of death among youth ages 10-24 years, with
approximately 74% of these deaths due to injuries from motor vehicle crashes, unintentional injuries, homicide, and suicide (CDC, 2010c). In addition to being at increased risk of car crashes, adolescents are also more likely to engage in high-risk behaviors, such as unprotected sex, especially when they are under the influence of alcohol or drugs (Tapert, Aarons, Sedlar, & Brown, 2001). According to the 2009 YRBS, 39% of sexually active high school students did not use a condom during last sexual intercourse (CDC, 2010c). This statistic is important because of the approximately 19 million new STD infections diagnosed in the United States every year, almost half, are among youth between 15 and 24 years of age (Weinstock, Berman, & Cates, 2004 & CDC, 2011b).

Risky behaviors of youth are also associated with the development of heart disease, cancer, and stroke during adulthood, the three leading causes of death in the United States. Contributing behaviors to these risks include tobacco use, poor nutrition, and lack of physical activity. Smoking is the most preventable cause of death in the United States and contributes to more than 85% of lung cancers along with being a major contributor to heart disease and stroke (U.S. Department of Health and Human Services, [USDHHS], 2010a). Results from the 2010 National Survey of Drug Use and Health (NSDUH) reported that 1.4 million youth under the age of 18 have tried their first cigarette and the average age of first use was 17.3 years. Survey results also reported that approximately 1,000 young people under the age of 18 become regular cigarette smokers every day (USDHHS, 2010b).

Healthy eating, the development of good nutritional habits, and regular physical activity in youth are protective risk factors for obesity. Data comparisons from NHANES
II (1976-1980) and NHANES (2003-2006) show alarming increases in childhood obesity. The prevalence of obesity in children ages 6 to 11 more than doubled in the past 20 years, increasing from 7.0% in 1980 to 20.0% in 2008. The obesity rate among adolescents ages 12 to 19 more than tripled, increasing from 5% to 17.6% (Ogden, Carroll, Curtin, Lamb & Flegal, 2010). According to the 2009 YRBS only 22.3% of high school students (grades 9-12) reported eating the recommended 5 servings per day of fruits and vegetables and only 18% had participated in the recommended minimum 60 minutes per day of physical activity (CDC, 2010c).

Health education in schools is important for providing youth with the knowledge and skills needed to develop healthy behaviors. Adolescents who come to school with health-related problems may have difficulty achieving academic success. A recent review of the literature by Basch (2011a) concluded that even when teachers are well-prepared and health education policies exist, the educational progress of students is limited when students are not motivated and unable to learn. Basch concluded that health problems negatively affect a student’s motivation and ability to learn. Data from the 2009 YRBS demonstrated a negative association between health-risk behaviors and academic achievement in high school students (CDC, 2010b). Students with higher academic achievement were less likely to engage in health-risk behaviors than their classmates with lower academic achievement.

Similar conclusions can be drawn from an analysis of data from the 2002 California Healthy Kids Survey (CHKS). This analysis looked at the relationship between Academic Performance Index (API) scores and health-related indicators such as substance use, violence, nutrition, and exercise. The results across the range of indicators
suggested that schools where students were low in health risk factors and high in protective factors had higher levels of academic achievement than schools high in health risk factors and low in protective factors (Hanson & Austin, 2002). These findings however, cannot be construed as a cause and effect relationship.

Hanson and Austin (2003) compared SAT scores from 1998-2002 for 7th, 9th, and 11th graders to data from the 2002 CHKS and found evidence to support that health risk can impede academic improvement, as defined by SAT scores. Test score gains were smaller in the California schools that had a higher percentage of students with health risk behaviors. These behaviors included sedentary lifestyle and not eating healthy; having ever been intoxicated, using illegal substances at school, and having ever been offered drugs at school. Test scores were also lower among students who experienced high levels of property theft, vandalism, and weapon possession on school grounds and who attended schools with high numbers of students who felt unsafe at school (Hanson & Austin, 2003).

In response to poor health behaviors demonstrated by students, new strategies, guidelines, tools, and resources supporting comprehensive school health education have emerged. The goal of comprehensive school health education is to assist students with the development of skills necessary to avoid the six critical risk behaviors identified by the Centers for Disease Control and Prevention (CDC) and to enable students to meet National Health Education Standards (NHES). National Health Education Standards are designed to provide a framework for curriculum development and instruction, and student assessment as related to health education (Joint Committee on National Health Education Standards, 2007). The HECAT (Health Education Curriculum Analysis Tool) is an
assessment tool developed by the Centers for Disease Control and Prevention (2011a) in partnership with health education experts, representing state education agencies, school districts, schools, colleges, and national organizations. The HECAT is used to help schools examine current curricula or to develop school health education curricula based on the National Health Education Standards and CDC’s Characteristics of Effective Health Education Curricula. Heath education is also one of eight components in the Coordinated School Health Program Model (CSHP).

**Purpose of the Study**

The purpose of the current study was to assess the quantity and content of health education being taught in charter schools. More specifically, the current study addressed the following research questions? 1) In what stage were charter schools for teaching health education at the high school level to their students? 2) How much time (number of hours) did charter schools invest in teaching selected health topics at the high school level? 3) How much time (number of hours) did charter schools invest in teaching health education topics that are aligned with the HECAT at the high school level? 4) What were the characteristics of charter high schools that spend the greatest amount of time and least amount of time (i.e., hours) teaching all health topics? 5) How many of the seven essential health skills, as described by the National Health Education Standards, were being taught by charter schools at the high school level? 6) Did charter school respondents believe that there are benefits to teaching health education in the high school classroom? 7) Did charter school respondents believe that barriers exist which prevented their school from offering more health education in the high school classroom?
Research Questions & Hypotheses

1. **In what stage are charter schools for teaching health education at the high school level to their students?**

   Hypothesis 1.0: The majority of charter schools will be in the precontemplation and contemplation stages regarding teaching health education to their high school students.

   Hypothesis 1.1: There will be no statistically significant difference in a charter school’s stage by the presence/absence of a local charter law requirement to teach health education at the high school level.

   Hypothesis 1.2: There will be no statistically significant difference in a charter school’s stage by the presence/absence of a school district requirement to teach health education at the high school level.

   Hypothesis 1.3: There will be no statistically significant difference in a charter school’s stage by the presence/absence of a state requirement to teach health education at the high school level.

   Hypothesis 1.4: There will be no statistically significant difference in a charter school’s stage by the respondent’s level of education.

   Hypothesis 1.5: There will be no statistically significant difference in a charter school’s stage between schools whose respondents believe that providing health education to high school students does not help to improve their overall academic performance and schools whose respondents believe that providing health education to high school students improves overall academic performance.
Hypothesis 1.6: There will be no statistically significant association between a charter school’s stage and the number of perceived benefits to teaching health education at the high school level as reported by respondents.

2. **How much time (number of hours) do charter schools invest in teaching selected health topics at the high school level?**

Hypothesis 2.0: There will be no statistically significant difference in the number of hours invested in teaching selected health topics by type of charter school.

Hypothesis 2.1: There will be no statistically significant difference in the number of hours invested in teaching selected health topics by type of charter sponsor/authorizer.

Hypothesis 2.2: There will be no statistically significant difference in the number of hours invested in teaching selected health topics by the rank of the state charter law (rank A-F).

Hypothesis 2.3: There will be no statistically significant difference in the number of hours invested in teaching selected health topics by the presence/absence of a health education policy within the charter law at the high school level.

Hypothesis 2.4: There will be no statistically significant difference in the number of hours invested in teaching selected health topics by the presence/absence of a health education district policy at the high school level.

Hypothesis 2.5: There will be no statistically significant difference in the number of hours invested in teaching selected health topics taught by the presence/absence of a health education state policy at the high school level.
Hypothesis 2.6: There will be no statistically significant association between the number of hours invested in teaching selected health topics and the number of perceived benefits to teaching health education at the high school level as reported by the respondents.

Hypothesis 2.7: There will be no statistically significant difference in the number of hours invested in teaching selected health topics between charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.

Hypothesis 2.8: There will be no statistically significant difference in the number of hours invested in teaching selected health topics by the geographical location of the school (urban, rural, and suburban).

3. **How much time (number of hours) do charter schools invest in teaching health education topics that are aligned with the HECAT at the high school level?**

Hypothesis 3.0: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by type of charter school.

Hypothesis 3.1: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by type of charter sponsor/authorizer.
Hypothesis 3.2: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by rank of the state charter law (rank A-F).

Hypothesis 3.3: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT and the presence/absence of a health education policy within the charter law at the high school level.

Hypothesis 3.4: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT and the presence/absence of a health education district policy at the high school level.

Hypothesis 3.5: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT taught by the presence/absence of a health education state policy at the high school level.

Hypothesis 3.6: There will be no statistically significant association between the number of hours invested in teaching health education topics that are aligned with the HECAT by the number of perceived benefits reported by the respondents to teaching health education at the high school level.

Hypothesis 3.7: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT between charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose
respondents do not believe health education can improve students overall academic performance.

4. **What are the characteristics of charter high schools that spend the greatest amount of time and least amount of time (i.e., hours) teaching all health topics?**

Hypothesis 4.0: None of the following factors will be more predictive than any other in determining the number of hours spent teaching recommended health education topics: enrollment size; rank of charter law; presence/absence of a certified/licensed high school health education teacher; and school health education requirement.

Hypothesis 4.1: There will be no statistically significant difference in the amount of time spent teaching health education in a charter high school by the type of charter school.

Hypothesis 4.2: There will be no statistically significant difference in the amount of time spent teaching health education in a charter high school by the type of charter school sponsor.

Hypothesis 4.3: There will be no statistically significant difference in the amount of time spent teaching health education in a charter high school by the location of the school (urban, rural, and suburban).

5. **How many of the seven essential health skills, as described by the National Health Education Standards, are being taught by charter schools at the high school level?**
Hypothesis 5.0: There will be no statistically significant difference in the number of seven essential health skills taught by type of charter school.

Hypothesis 5.1: There will be no statistically significant difference in the number of seven essential health skills taught by type of charter sponsor/authorizer.

Hypothesis 5.2: There will be no statistically significant difference in the number of seven essential health skills taught by the rank of the state charter law.

Hypothesis 5.3: There will be no statistically significant difference in the number of seven essential health skills taught by the presence/absence of a health education policy within the charter law at the high school level.

Hypothesis 5.4: There will be no statistically significant difference in the number of seven essential health skills taught by the presence/absence of a health education district policy at the high school level.

Hypothesis 5.5: There will be no statistically significant difference in the number of seven essential health skills taught by the presence/absence of a health education state policy at the high school level.

Hypothesis 5.6: There will be no statistically significant association between the number of seven essential health skills taught and the number of perceived benefits reported by the respondents to teaching health education at the high school level.

Hypothesis 5.7: There will be no statistically significant difference in the number of seven essential health skills taught between charter schools whose respondents believe health education can improve students overall academic performance and
charter schools whose respondents do not believe health education can improve students overall academic performance.

6. **Do charter school respondents believe that there are benefits to teaching health education in the high school classroom?**

Hypothesis 6.0: In high school, the majority of respondents will identify multiple perceived benefits (more than three) to offering health education in the classroom.

Hypothesis 6.1: There will be no statistically significant difference in the number of perceived benefits to teaching health education identified by type of charter school.

Hypothesis 6.2: There will be no statistically significant association between the number of identified perceived benefits to teaching health education by the number of years of experience the respondent has in teaching.

Hypothesis 6.3: There will be no statistically significant association between the number of identified perceived benefits to teaching health education by the number of years of experience the respondent has in administration.

7. **Do charter school respondents believe that barriers exist which prevents their school from offering more health education in the high school classroom?**

Hypothesis 7.0: In high school, the majority of charter school respondents will identify multiple perceived barriers (more than three) that they believe prevent their school from offering more health education in the classroom.

Hypothesis 7.1: There will be no statistically significant difference in the number of perceived barriers identified by type of charter school.
Hypothesis 7.2: There will be no statistically significant association between the number of identified perceived barriers to teaching health education and the number of years of experience the respondent has in teaching.

Hypothesis 7.3: There will be no statistically significant association between the number of identified perceived barriers to teaching health education and the number of years of experience the respondent has in administration.

Definitions of Terms

Charter law: Significantly influences the development of charter schools but varies by state. Charter laws cover seven basic policy and legal areas: charter development, school status, fiscal, students, staffing and labor relations, instruction, and accountability (Center for Education Reform, 2010c).

Charter school: Publicly funded elementary school or secondary school that has been freed from some of the rules, regulations, and statutes that apply to other public schools, in exchange for some type of accountability for producing certain results, which are set forth in each charter’s school charter (National Education Association, 2001).

Charter school authorizer/sponsor: The entity responsible for the operational and educational integrity of the charter school. Authorizers/sponsors approve the charter application and have the ability to close a charter school. Generally there are four types of entities allowed to authorize/sponsor charter schools: the local school board, state universities, community colleges, and the state board of education but this can vary from state to state, depending on the state’s charter law (National Association of Charter School Authorizers, 2010).
**Health Belief Model:** A theoretical model that attempts to explain and predict health behaviors. There are six constructs of this model including perceived benefits and perceived barriers (Glanz, Rimer, & Lewis, 2002).

Perceived barriers: An individual's assessment of the influences that discourage adoption of the promoted behavior.

Perceived benefits: An individual's assessment of the positive consequences of adopting the behavior.

**HECAT:** Health education curriculum analysis tool. An assessment tool designed to help schools conduct a clear, complete, and consistent analysis of health education curricula based on the National Health Education Standards and Center for Disease Control and Prevention’s Characteristics of Effective Health Education Curricula (Center for Disease Control and Prevention, 2011a).

**Health education:** A planned, sequential, K-12 curriculum that addresses the physical, mental, emotional and social dimensions of health (Center for Disease Control and Prevention, 2008).

**High School:** Students in grades 9-12.

**Majority:** Greater than 50%.

**National Health Education Standards:** A framework for curriculum development and selection, instruction, and student assessment in health education at grades 2, 5, 8, and 12 (Joint Committee on National Health Education Standards, 2007).

**School Health Policies and Programs Study (SHPSS):** The School Health Policies and Programs Study (SHPSS) 2006 is the largest, most comprehensive assessment of school
health policies and programs in the United States ever conducted (Kann, Brenner, & Wechsler, 2007).

**School Health Profiles Survey**: A system of surveys assessing school health policies and practices. Profile surveys are distributed to middle and high school principals and lead health education teachers in states, large urban school districts, territories, and tribal governments. Profiles are conducted every 2 years, with the next survey scheduled for 2012 (Centers for Disease Control and Prevention, 2010a).

**Stages of Change**: A component of the Transtheoretical Model. This model addresses an individual’s readiness to change their behavior and consists of 6 stages (Prochaska, DiClemente, & Norcross, 1992). The Stages of Change include:

- **Precontemplation**: The individual has no plans to make a behavior change in the next 6 months.
- **Contemplation**: The individual plans to make a behavior change in the next 6 months.
- **Preparation**: The individual plans to make a behavior change within the next 3 months and has taken steps to do so.
- **Action**: The individual has made a change but it has been less than 6 months since the change has been made.
- **Maintenance**: The individual has made a change and has been maintaining the changed behavior for more than 6 months.
- **Relapse**: The individual has returned to their pre-existing behavior.

**Youth Risk Behavior Survey (YRBS)**: Survey developed in 1990 by the Centers for Disease Control and Prevention (CDC) to monitor priority health risk behaviors that
contribute to the leading causes of death, disability and social problems among youth and young adults in the United States (Centers for Disease Control and Prevention, 2010c).

**Limitations of the Study**

This study contains several potential limitations. Schools identified as pending in the database may have opened during the time of the study but were not surveyed and schools identified as open and surveyed may have closed after the data were collected. Another limitation of this study was addressing the survey to the charter school leader or health education teacher but not always having one of these two individuals complete the survey. Along with this limitation, was the possibility that the respondent obtained information from other people in the school, which could affect the accuracy of the responses and therefore, impact the internal validity of the current study. Not clearly defining what the meaning of health education is in the cover letter is a threat to internal validity as the respondent could interpret the definition of health education as being a health education topic covered in a class other than health education. Another threat to the internal validity of the study was the possibility that the respondent had limited knowledge of the information being requested on the survey and therefore, was unable to provide valid answers to the survey questions. In addition to possible limited knowledge of survey material, the respondent may have answered the survey in what was perceived as socially desirable, posing a threat to internal validity. Another potential limitation of the study was the selection of a closed-format survey instrument. A closed format does not allow for elicitation of additional information from the subjects that may be provided in an open-format. Charter schools may have closed between the time of selection and
time of sending the survey, causing a low response rate, posing a threat to the external validity of the study.

**Delimitations of the Study**

This study was delimited to open charter schools listed on the Center of Education Reform’s website and therefore, may not be representative of all charter schools. Another delimitation was that only information about the health education curricula was collected. Limited conclusions can be made regarding other components of the coordinated school health model (e.g. health promotion for staff and healthy school environment). The study was also delimited to high school grades and therefore, no conclusions can be made regarding health education curricula at middle and elementary grade level.
Chapter 2

Review of Literature

This chapter will present a review of the professional literature that is relevant to health education in traditional public schools and charter public schools. The topics related to charter schools that were reviewed include: 1) History of Charter Schools; 2) Structure and Governance of Charter Schools; 3) Current State of Charter Schools; and 4) Challenges Unique to Charter Schools. Topics related to school health education include: 1) Benefits of Health Education in Schools; 2) Data Trends in Health Risk Behaviors of Youth; 3) Heath Education in Schools; 4) National Health Education and Standards and Practices; 5) Barriers to Health Education in Schools; and 6) Summary.

History of Charter Schools

A charter school is defined as publicly funded elementary or secondary school that has been freed from some of the rules, regulations, and statutes that apply to other public schools, in exchange for some type of accountability for producing certain results, which are set forth in each charter’s school charter (National Education Association, 2001). The first charter school opened in St Paul, Minnesota in 1992. Today there are more than 5,000 charter schools (Center for Education Reform [CER], 2010b).

Three trends in U.S. education helped launch the beginning of charter schools: 1) growing inequality among household incomes; 2) government’s growing inability to fund increases in K-12 education; and 3) increased perceptions that charter schools raise the standards for education (Deal & Hentschke, 2004). According to past research, the most commonly identified reason for founding a charter school (75%) was to realize an alternative vision (U.S. Department of Education, 2000). The second most cited reason
for founding a charter school was to serve a special population. Nearly one in five (19%) charter schools that opened prior to 1998 listed serving a special population as the reason for opening. This proportion increased to 28% for those charter schools founded after 1998. Other reasons cited for founding a charter school included a desire to gain autonomy from state or district regulation, to attract students, financial reasons, and to increase parental involvement.

Parents’ desire for more schooling options has also influenced the growth of charter schools. A national survey, conducted by the National Alliance for Public Charter Schools asked a random sample of registered voters questions regarding charter schools. Of the registered voters surveyed, 77% responded that they favored giving parents more schooling options (Howell, West, & Peterson, 2008). A similar study, conducted by the Center for Education Reform (2008), found that 69% of registered voters favored giving parents more schooling options. Along with more schooling options, other reasons cited for choosing a charter school included an innovative curriculum, a focus on academic achievement, an alternative to underperforming traditional public schools, smaller class size, school safety, community enrichment, and educational philosophies similar to individual beliefs.

Structure and Governance of Charter Schools

**Charter school law and authorization process.** Before becoming established, a charter school must go through an authorization process. An authorizer/sponsor is the organization responsible for granting or rejecting authorization. Each state independently establishes its charter application/authorization process and charter by-laws, which include start-up and closing criteria. The success of a charter school is partly dependent
on the strength and common practices of the authorization entity. The type of entity that
grants authorization varies by state. Most charter school authorizers/sponsors fall into the
category of local education agencies (LEAs) which are usually established local school
boards. Other authorizers include state boards of education, universities and colleges,
mayors’ offices and city councils, non-profit organizations, state boards, for-profit
educational management organizations, and in some cases special purpose charter boards.
The annual survey of American charter schools conducted by the Center for Education
Reform in 2009 showed that 42% of responding schools were authorized by the local
school board, followed by state boards of education (33%), state charter school boards
(12%), Universities/Colleges (8%), nonprofits (4%), and city/mayor (1%) (CER, 2010a).

A study conducted by the U.S. Department of Education, Office of Innovation
and Improvement (2007), reviewed eight successful authorizers and noted six common
practices among them: build a strong organization, develop a strong talent pool, select for
quality, support new school operators, provide meaningful and transparent oversight, and
holds schools accountable for meeting performance goals.

The content of the charter law also plays a significant role in the success or failure
of a charter school. Seven basic policy and legal areas are generally covered in each
state’s charter law: charter development, school status, fiscal, students, staffing and labor
relations, instruction, and accountability. The Education Commission of the States
provides a state database of policies for charter schools and the Center for Education
Reform annually examines and ranks states by the strength of their charter school law.
According to the Center for Education Reform (2010c) characteristics of states with
highest ranking charter school laws include: supports an environment that promotes
growth and expansion of charter schools; provides more schooling choices for parents; does not have a cap on the number of charter schools that can operate in that state; allows many different types of groups to apply to open charter schools; and permits multiple charter authorizers or provides applicants with a strong appeals process if the original application is denied. States ranked with stronger charter laws also exempt charter schools from most of the school district’s laws and regulations including allowing a charter school principal to have flexibility when hiring staff and allowing the charter to be its own legal entity.

Another criterion by which a charter law is measured is full funding and fiscal autonomy. A strong law will allow the charter school to control its own finances and receive similar funds as other public schools in the state and district. After a review of the 41 state charter school laws and the District of Columbia, the Center for Education Reform (2010c) assigned each state a rank of either A (honorable), B (high achievers), C (needs improvement), D (barely making it), or F (flunked). The three states with the strongest charter laws included Minnesota, District of Columbia, and California. The three states identified with the weakest charter laws included Kansas, Virginia, and Iowa. In 2008, Mississippi’s charter law was ranked as the weakest and in July of 2009, when the charter law expired, the state legislature elected not to re-authorize the law. Mississippi’s charter law was re-instated in 2010 and Maine passed their first charter school law in the summer of 2011. All states and their current 2011 rankings are presented in Table 1.
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*Center for Education Reform, November, 2010*
Every charter school is required by state law to have a board of directors who are ultimately responsible for overseeing the operation of the school. Most states do not mandate training for charter school board members and it is not uncommon to see parents of children attending the charter school as board members. Once a charter school is approved, the authorizing entity and the charter school board develop a contract outlining the standards the charter school must meet. The contract identifies the school's mission, program, goals, students served, methods of assessment, and ways to measure success. The length of time for which charters are granted varies, but most are granted for 3-5 years. At the end of the term, the entity granting the charter may renew the school's contract based on how successful the school adheres to the charter contract.

**Charter school leaders and teachers.** As the charter school movement continues to grow, the demand for qualified, motivated leaders will increase. According to the 2003-2004 Schools and Staffing Survey, traditional public school leaders and charter school leaders are similar in race and gender, with white males being the most common group to lead either school (Strlzek, Pittsonberger, Rlordan, Lyter, & Orlofsky, 2006). The National Charter School Research Project examined charter school leader characteristics in six states (Center on Reinventing Public Education, 2007). Charter school leaders were younger and less experienced than their traditional public school peers. Charter school leaders were commonly in their thirties and had less than two years of experience leading the school. In order for the charter school movement to grow successfully, recruitment of good leaders is critical. In response to the demand for quality charter school leaders, there has been an increase in the number of training opportunities for charter school leaders.
These training options range from full time academic programs to on-line and summer enrichment courses (Campbell & Grubb, 2008).

Charter school teachers may have different qualification requirements than traditional public school teachers. Under the 2001 No Child Left Behind Act (NCLB), specific requirements for teachers in traditional public schools who teach core academic subjects include: state certification or license, bachelor’s degree, and demonstrated competency in academic subjects in which the teacher teaches. Under NCLB or Title I, core academic subjects are defined as English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography.

The qualifications of charter school teachers under NCLB are specifically defined by the state charter school law and therefore, can be defined differently than teachers in traditional public schools. A teacher in a charter school does not have to be certified or licensed by the state if this is not a requirement defined in the state’s charter law (U.S. Department of Education, 2003). According to the Education Commission of the States (2011), of the 39 states with charter schools and the District of Columbia, 15 states require that their charter school teachers be certified. Four states have no certification requirements and 22 states have flexible requirements (Table 2). These requirements range from allowing waivers to teach without certification to requiring a minimum percent of teachers to hold state certifications or licensures.

The 2003-2004 Schools and Staffing Survey reported that charter school teachers tend to have less teaching experience than traditional public school teachers and were more likely to be offered financial incentives to teach less popular subjects such as math
Table 2
Charter School Teacher Certification Requirements by State, 2005

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* Flexible – variations in certification requirements
and special education (Strlzak et al., 2006). In their annual survey of American charter schools, the Center for Education Reform (2010a) found that 54% of respondents compensate their teachers using a skill or performance based contract and that 88% of schools said their teachers do not participate in a district collective bargaining or master district teacher agreement.

Current State of Charter Schools

Growth trends. The charter school movement continues to be one of the fastest growing reforms in the United States. Prior to 1998 there were a total of 666 charter schools. The number of charter schools that opened during the 2010-2011 school year was 465 (CER, 2010b). The average number of new schools that opened between 1998 and 2011 was 413. Today there are close to 5,400 charter schools serving approximately 1.7 million children across forty one states and the District of Columbia. Based on student population, charter schools currently comprise 5.4% of all public schools in the United States (NAPCS, 2011). The state with the largest number of charter schools is California (estimated at 941) while Virginia and Wyoming have the fewest at four each (CER, 2010b). Maine and Mississippi currently have no charter schools but have a charter school law. Among all cities, New Orleans has the highest market share of students in charter schools at 57%. The nine states that currently do not have charter schools include: Alabama, Kentucky, Montana, Nebraska, North Dakota, South Dakota, Vermont, Washington, and West Virginia.

Charter school characteristics. According to the National Center for Educational Statistics, the average enrollment of a traditional public school in 2006-2007 was 478, while the average enrollment of a charter school was 372 (CER, 2010a). It is estimated
that there are over 365,000 children on charter school waiting lists, with a typical charter school waiting list averaging 40 students. The annual survey of American charter schools reported that 65% of the schools surveyed reported having waiting lists (CER, 2010a). Although total enrollment differs between public and charter schools, the student-teacher ratio is similar at public and charter schools at approximately 16 students per teacher (U.S. Department of Education, 2008). Approximately one half of charter students fall into one of three categories: at-risk (50%), minority (52%), or low-income (54%) and 43% of charter schools have enrollments of at least 60% minority students (CER, 2010a). Seventy six percent of the schools surveyed by the Center of Education Reform were themed based, with college preparatory being reported most often (31%).

The National Alliance for Public Charter Schools compares annual data of charter schools and non-charter schools. Data comparison categories include grade configuration, geographic location, extended learning time and adequate yearly progress. In the 2009-2010 school year, the breakdown of charter schools by grade level included high school (20.6%), middle and high school (10.7%) and all grades, k-12 (11.2%). In contrast, non-charter schools were more likely to be elementary only schools (55.2%), (National Alliance for Public Charter Schools [NAPCS], 2010c). Based on geographic location, 54.7% of charter schools were located in the city versus only 24.5% of non-charter schools (NAPCS, 2010b).

An initiative, Inside Charter Schools, compared various characteristics of charter and public schools (Center on Reinventing Public Education, 2007). One of these characteristics was length of the school day. The standard school day length in a traditional public school is 6.6 hours, while charter school day length varied from 6.3
hours to 6.9 hours. The Initiative found that the length of the school day was dependent on the charter authorizer. The longer school day was usually supported when the authorizer was a post-secondary institution and the shorter school day was most likely to be supported by a state charter granting agency. Charter schools, when compared to public schools, were also more likely to use block scheduling and team teaching. The National Alliance for Public Charter Schools compared extending learning time offered during the 2008-2009 school year in charter schools and non-charter schools. Almost 10% of charter schools offered students extended learning time, while only 0.2% of non-charter schools offered extended learning time (National Alliance for Public Charter Schools [NAPCS], 2009).

**Charter school funding.** Nationally, charter schools continue to expand and are now an established source of educational opportunity for parents who are looking for schooling alternatives. With the support of the Obama administration some of the traditional barriers that once slowed the growth of charter schools have been removed. However, the financial disparities in charter school funding remain. In 2005, a group of researchers from the Thomas B. Fordham Institute compared charter school funding to traditional school funding in 16 states and the District of Columbia for the 2002-2003 school year (Finn, Osberg, Speakman, & Hassel, 2005). Four major results came from this study:

1. Charters schools overall were significantly underfunded (range from 39.5% to 4.8% in South Carolina and New Mexico, respectively) relative to district schools. Average difference was 21.7% or $1,801 less per pupil.
2. Funding discrepancies were even wider in most big urban school districts. Average discrepancy across urban districts was 23.5% or $2,256 less per pupil for those enrolled in charter schools.

3. The primary reason for charter schools’ funding disparity was the lack of access to local and facility funding. Charter schools had less inequity with access to state and federal funding but the degree of inequity grows when looking at access to local and facility funds.

4. Quality data were often unavailable. States allowed easier access to detailed data on federal, state, local and other revenues for district schools versus charter schools.

In 2010, a group of researchers from Ball State University conducted a follow-up study using the same 16 states and District of Columbia in addition to seven additional states and funding data from the 2006-2007 school year (Batdorf, Maloney, May, Doyle, & Hassel, 2010). Results from this study mirrored the results reported in 2005:

1. Charter schools overall were significantly underfunded (range from 41.2% to 6.7% in District of Columbia and New Mexico, respectively) relative to district schools. Average difference was 19.2% or $2,247 less per pupil.

2. Funding disparities were even wider in selected school districts (majority urban). Average discrepancy across focus schools was 27.8% or $3,727 less per charter school pupil compared to district schools.

3. The primary reason for the funding disparity was the lack of access to local and facility funding.

4. Quality data were often unavailable.
Charter schools will continue to be challenged if funding inequities persist. Between 1992 and 2009, 657 charter schools were closed with 41% of these closures reported to be due to financial burdens, followed by mismanagement (27%), and poor academic performance (14%) (CER, 2010a).

**Teacher attrition.** Teacher attrition has been studied in traditional public and charter schools and is an important factor in determining school quality and financial stability. Factors contributing to high attrition include limited resources for classroom materials, large class sizes, lack of facilities and space, unsafe and unattractive facilities, lack of quality leadership, lack of professional development opportunities, and low salaries (Adamson & Darling-Hammond, 2011). Charter schools, due to financial inequities, are at greater risk for high attrition as financial inequity directly impacts the factors attributed to high attrition. Similar to traditional public schools, teacher attrition in charter schools located in high-poverty, low performing schools and districts have the highest attrition rates. Teachers in such schools are likely to leave in pursuit of teaching jobs in higher-performing, higher salaried schools and improved working conditions (Adamson, 2011).

The National Commission on Teaching and America’s Future estimates that individual urban schools spend $70,000 annually on costs related to teacher transfers (National Commission on Teaching and America’s Future [NCTAF], 2007). These costs directly impact charter schools as 54.7% of all charter schools are reported to be located in urban areas (National Alliance for Public Charter Schools [NAPCS], 2010).

Miron and Applegate (2007) surveyed teachers in charter schools across six states between 1997 and 2006. The data indicated that teacher attrition rates varied from 15-40% with rates most commonly between 20-25%. For teachers with less than 3 years of
experience, the attrition rates were closer to 40% annually. Teachers more likely to leave were younger, non-certified, taught at the middle or high school level, had less education and less years of experience teaching, and were generally dissatisfied with the school’s mission and/or administration and governance. Based on a literature review by Stuit and Smith (2010) the odds of an uncertified teacher leaving the profession were 200% greater than those of certified teachers, and part-time teachers were found to be twice as likely to leave teaching as their full-time peers.

**Student Performance Assessment**

Movement towards proficiency testing and federally mandated standardized assessment in schools began to evolve in the early late nineteenth century. Educators were developing means to evaluate and differentiate academic ability of students in overcrowded classrooms. Alfred Binet developed and administered tests of intelligence for use in identifying children with learning disabilities. His test, adopted and modified in 1916, became the Stanford-Binet Test of Intelligence. From this, an era of mass testing began as versions of the IQ test were adapted to sort people according to ability. Examples include the development of the Stanford Achievement Test in 1923, the Scholastic Aptitude Test (SAT) in 1925, and the American College Test (ACT) in 1959. As standardized test scores became important measures of an individuals’ potential for success, the need for standardization in the administration of aptitude and achievement tests evolved. This process allowed for student test scores to be compared within and between schools.

In 1965, the Elementary and Secondary Education Act (ESEA or Title 1) was passed. This act required all schools to administer standardized tests and submit the
results in order to qualify for federal funding. In 1974, Title 1 was expanded to be used to measure school improvement and on January 8, 2002 the Elementary and Secondary Education Act was re-authorized as the federal No Child Left Behind Act (NCLB) of 2001. The law authorized the U.S. Department of Education to withhold federal funds to states not adopting school accountability systems based on minimum competency testing. Prior to the NCLB, 39 states already had some degree of accountability system in place at the school level (Hanushek & Raymond, 2005). Under NCLB, the progress of schools and districts in raising student academic achievement was determined largely by the percentage of students passing proficiency tests in core subjects such as reading and math and had to include scores of all students.

One of the most frequently used assessments of student performance is the National Assessment of Educational Progress (NAEP). This initiative was first enacted in 1969 and continues to be synonymous with the “Nations Report Card” (Gallagher, 2003). A recent study conducted by the Center on Education Policy (2008) assessed test score trends across 50 states from 2002 through the 2006-2007 school year. The study focused on test score improvements (state administered tests and NAEP) in reading and math and on achievement gaps between subgroups of students. Overall, data revealed that the majority of states demonstrated “moderate to large gains” in test scores. These gains were the strongest in elementary schools for both reading and math, more profound in math than reading at the middle school level and the least pronounced for both subjects at the high school level. Both state tests and NAEP data indicated a narrowing of the achievement gap for African American and low-income students. Although the gap is narrowing, African American and Hispanic students still scored six to ten points lower
than white students on the NAEP between fourth and eighth grade (Hanushek & Raymond, 2005). While proficiency test scores appear to be improving, the Center on Education Policy cautions that since the majority of states had policies in place to raise academic achievement prior to the enactment of NCLB, it is difficult to determine the direct impact of NCLB.

Under the NCLB, schools have strong incentives to focus on pass rates. Under the law, schools with low ratings must allow students the opportunity to transfer to other public schools, including charter schools and as a result, may lose some federal revenue. Critics of NCLB posit that the overall well-being of school children and adolescents is not being considered and that educators are reacting to the NCLB by narrowing their focus solely to proficiency scores. Since research has demonstrated that active and healthy students tend to be better learners, school health supporters believe that schools must not only attend to the academic achievement of students but also attend to their social, physical, and mental needs (Basch, 2011b).

**Academic Progress**

Well-qualified teachers are inequitably distributed to students in the United States. According to a literature review by Aikens & Barbarin (2008) schools in low socioeconomic communities suffer from migration of qualified teachers and low educational achievement when compared to schools in high socioeconomic communities.

Student academic achievement is extremely important to charter schools because unlike traditional public schools, underperforming charter schools can be shut down. Studies examining the academic success of charter schools offer mixed conclusions. One explanation for the variance in results is the yearly fluctuation of student and staff
demographics as teachers and students tend to change schools from year to year. Barriers to evaluating academic achievement in charter schools include limited data, short time periods of being an established charter, finding an equal comparison group, and policymakers not wanting statewide data (Miron & Nelson, 2001).

As part of the 2003 fourth grade National Assessment of Educational Progress (NAEP), the National Center for Education Statistics (NCES) was asked to compare academic achievement in reading and math of fourth grade students enrolled in charter schools to students enrolled in traditional public schools (Braun, Jenkins, & Grigg, 2006). The charter school analysis compared charter schools affiliated with a public school district to charter schools not affiliated with a public school district. Reading and math test scores were significantly lower in charter schools not affiliated with a public school district when compared to traditional public schools. After adjusting for student characteristics, the test scores for charter school students were 4.2 points lower in reading and 4.7 points lower in math compared to scores of traditional public schools. Test scores for charter schools affiliated with a public school district were not significantly lower than traditional public school scores. Charter schools that served a high minority population and had a central city location had significantly lower test scores in both reading and math and were lower in charter schools not affiliated with a public school district (Braun, 2006).

The National Alliance for Public Charter Schools (2010a) compared similar data for fourth grade reading and math proficiency scores in charter schools versus non-charter schools. The fourth grade charter schools were 24% proficient in reading and 28% in math compared to non-charter schools which were 32% proficient in reading and 39%
in math. The Alliance also compared several indicators of academic performance (mean ACT scores, mean SAT scores, and schools making adequate yearly progress) of high school students in charter schools and traditional public schools in the 2008-2009 school year. Mean ACT scores for charter school students (17.3) was lower than for public school students (20.5). Mean SAT scores were also lower for charter school students (1310) than public school students (1541). Percent of schools making adequate yearly progress (AYP) was 62.7% for charter schools and 67.2% for public schools (National Alliance for Public Charter Schools [NAPCS], 2009).

A literature review of 14 charter school studies conducted by Betts and Tang (2008) revealed mixed results when comparing academic performance of charter school versus academic performance of traditional public schools:

- Charter schools more often outperform their traditional school counterparts.
- Charter schools often outperform traditional public schools on reading tests in elementary schools and on math tests in middle schools.
- Overall, one half to two thirds of studies reviewed showed positive and significant effects of charter school enrollment on math and reading test scores for elementary and K-8 schools.
- Charter school performance was weaker in elementary school math, middle school reading, and in high schools overall.
- Evidence of consistent under performance in charter schools was found in high school reading and math scores.

There are also inconsistencies in data reporting on academic achievement at the high school level. In contrast to reports that charter high schools tend to underperform
traditional public schools, a survey released by the U.S. News and World Report (Morse, 2008) indicated that eighteen charter high schools were listed among the top 100 high schools in the nation. The survey analyzed data from the 2006-2007 school year for 21,069 public high schools and charter schools representing 48 states. The schools were selected based on a 3-step process that measured proficiency in reading and math, performance of less-advantaged students (African American, Hispanic, and low income), and college-readiness performance. Of the eighteen schools, seven were in California.

Betts and Young (2008) recommended two approaches for improving the accuracy of charter school academic data. One is to compare the performance of students who win a lottery to attend a charter school compared to those students who do not win. A lottery system is implemented when more students apply to a charter school than what the charter school can accommodate. A student not winning the lottery will re-enter the public school system. Another method is to follow individual students attending charter schools and examine test scores over a period of time, not just at one moment in time (one academic year) and not just in one type of school (traditional public vs. charter).

Miron and Nelson (2001) stated that charter school success should not be measured solely on student academic achievement. Other variables inherent to success can include student/parent satisfaction and market accountability and stakeholder beliefs and values. To assist with the assessment of charter schools, the National Consensus Panel on Charter School Academic Quality released four recommended indicators of academic quality in charter schools: student achievement level, student progress in time, post-secondary readiness and success, and student engagement (National Alliance for Public Charter Schools, 2008). Betts and Young (2008) also suggested that improved
quality of charter schools will develop as parents become more concerned with academic achievement and pull their children from ineffective charter schools. Charter schools which fail to boost student achievement will be forced to close and those charter schools that outperform traditional public schools will be renewed and allowed to expand in both student enrollment and campus size.

**Challenges Unique to Charter Schools**

According to a review by Campbell, Gross, and Lake (2008), a significant challenge faced by charter schools is the cost of securing a facility to operate the school. Unlike traditional public schools, charter schools are responsible for finding and maintaining their own buildings. Approximately 65% of charter school facilities are rented, while only 30% are owned (CER, 2010b). Renting facilities adds an extra financial burden to charter schools. Data from NAPCS (2011) reported that 90.6% of charter schools operating during the 2010-2011 school year were start-ups while 9.4% were conversion schools.

Another challenge unique to charter schools is student and staff/teacher recruitment. Recruitment is a challenge because unlike traditional public schools, charter schools operate autonomously without the support of a district central office. Without district central office support, recruitment, fund raising, and management of school facilities and finances can be difficult tasks for charter schools and their leaders. Charter school leaders also report having a lack of sufficient time for strategic planning. One in five charter school leaders report being slightly or not at all confident in implementing a strategic plan (Campbell, 2010).
Another challenge charter schools face is a high turnover of school leaders. Data from the 2007 National Charter School Project reported that 71% of school leaders surveyed planned to leave their current school within the next five years (Campbell, 2010). With the growing number of charter schools, consistent leadership along with a strong transition plan are key variables to the success of a charter school. The report identifies key strategies for selecting strong and stable leaders. These strategies include: more involvement from governing boards in leader selection process; development of strategic plans for leadership replacement as part of the application and renewal process; mentoring; and development of succession management plans (Campbell, 2010).

Charter school boards face challenges similar to school leaders: lack of training, fiscal management, lack of experience in governance, and lack of charter school founding principles (Miron & Applegate, 2007). Most charter board members are selected by the founder of the school, unlike traditional public school board members who must be elected by the public. Being selected by the founder often means the board members are friends or close associates of the founder. This relationship may enrich or hinder the success of the school. Another concern is the assignment of boards by charter management companies. Often management companies initiate the charter school proposal and approval process, recruit board members and influence the charter law. This approach is not ideal and contradicts the concept of autonomy and community focused goals of charter schools. Appointed boards should actively choose a management company, not a management company selecting the board members (Miron & Applegate, 2007).
Another challenge faced by charter schools is public opposition. The debate between charter school advocates and opponents will not disappear anytime soon. Opponents argue that charter schools will attract the smarter and easier to teach students; are formed solely for improving academic performance and not based on innovation; will limit the common ground in neighborhoods by creating schools around special interests; will lead to re-segregation; have too little accountability; and will misrepresent or misreport performance indicators (Finn, 2006).

To counter, proponents of charter schools argue that charter schools are needed to offer alternatives to low performing traditional public schools. Proponents argue that charter schools create a threat to underperforming traditional charter schools and may actually lead to their improvement. While opponents of charter schools feel student selection is a negative characteristic, proponents believe that student selection is a benefit to the overall success of such charter schools because the student can be matched to the mission of the particular charter school, and therefore, will have greater opportunity for success. Proponents also believe that the autonomy and smaller size of charter schools creates an opportunity for a variety of partnerships within the community to enhance student learning (Hawks, 2007).

Public awareness also has an impact on the perception of charter schools. Even though charter schools have now been in existence for over two decades and are often visible in the media, data from several national surveys consistently demonstrate that the merits and recognition of charter schools is still undecided. A national survey conducted by the National Alliance for Public Charter Schools (2008), indicated that only 38% of a random sample of registered voters accurately defined charter schools as public schools.
In their annual survey of American charter schools the Center for Education Reform (2008) reported that only 20% of respondents correctly identified charter schools as public schools. When asked if they were in favor of charter schools, 39% responded yes, 14% responded no, and 47% responded unsure. Data from a similar survey sponsored by Education Next and the Program on Education Policy and Governance (PEPG) showed 43% supported, 18% opposed, and 39% of those surveyed were undecided as to the merits of charter schools (Howell, West, & Peterson, 2011). Data from the 2008 survey yielded similar results with 40% of those surveyed undecided as to the merits of charter schools (Howell, West, & Peterson, 2008).

Many variables contribute to the success of a charter school. Providing charter school sponsors/authorizers with the necessary tools to review charter school applicants will help. The National Association of Charter School Authorizers has prepared a suggested framework for authorizers to use when reviewing applications. The framework includes: 1) description of the proposed educational program (i.e., calendar, daily class schedule, extracurricular activities, addresses needs of students with disabilities, measuring students’ performance progress, etc.) 2) business plan (i.e., budget, fundraising, 5-year plan, etc.) 3) governance and management structure (i.e., organizational chart, qualifications, recruitment process, financial plan, lottery system, etc) 4) benchmark comparisons and, 5) measurement of student academic growth (National Association of Charter School Authorizers [NASCA], 2010).

Because charter schools operate outside the traditional school district structure and have unique challenges, the development of charter support organizations (CSO) has emerged. The CSO is typically a membership organization focused on legislative, policy,
and public advocacy or resource centers that provide technical assistance in specific areas of charter development such as facility management, special education, and board development (NAPCS, 2008). Through focus groups of CSO leaders in various states, six principles of an effective and successful CSO were recognized: quality, sustainability, advocacy, stakeholder services, community, and growth. An effective CSO will offer support to both the charter school board and school leaders and positively impact the success of a charter school.

Benefits of Health Education in Schools

More than 95% of all youth between the ages of 5 and 17 years are enrolled in school. Such a captive audience gives schools more potential influence on the lives of young people than any other social institution except the family. Since schools have the potential to influence the behavior of youth, academic achievement and proficiency test scores should not be the only standards by which school success is measured. Schools provide a setting in which friendships develop, socialization occurs, and norms that govern behaviors are developed and reinforced.

In 1997, the Institute of Medicine (IOM) advised that students should receive health-related education and services necessary to derive maximum benefit from their education and enable them to become healthy, productive adults (Institute of Medicine, [IOM], 2007). Along with the IOM, several national organizations and government agencies also advocate for school health education, with the premise that good health has a positive impact on academic achievement. In the 2004 policy statement on school health, The Council of Chief State School Officers (CCSSO) called on educators to recognize the impact that health has on academic achievement. The CCSSO recommends
that policies and practices which address student health and development be included in any comprehensive strategy for improving academic performance (Council of Chief State School Officers, 2004). The Council also suggests that schools which promote health have a positive impact on both the academic and health status of children. This group also supports the belief that healthy kids make better students and that better students make healthy communities.

Another national organization supporting health education in schools is the Society of State Directors of Health, Physical Education and Recreation (SSDHPER). The SSDHPER, founded in 1926, is comprised of individuals whose purpose is to promote sound programs of health, physical education and recreation in educational settings throughout the United States. The Society of State Directors of Health, Physical Education and Recreation believes that health education in schools encourages positive health outcomes and can assist students with acquiring the knowledge and skills needed to become healthy adults. According to the SSDHPER, health education can also improve student academic performance because healthy, physically active students are more alert and have better school attendance (Society of State Directors of Health, Physical Education and Recreation, 1998). Additional organizations recognizing the critical link between health and learning include the National School Boards Association (NSBA), the National Association of State Boards of Education (NASBE) and the American Cancer Society (ACS).

The U.S. Department of Health and Human Services (USDHHS) has been establishing and monitoring national health objectives which address a broad range of current health issues for four decades. In Healthy People 2010, the impact that schools
can have on health were reflected in the following national health objectives (USDHHS, 2009).

**Objective 7-1:** Increase the high school completion rate to 90 percent of persons aged 18 to 24 years (1998 baseline was 85%).

Education is a strong predictor of health. Therefore, high school dropout rates should be addressed as part of the nation’s health promotion and disease prevention agenda. Dropping out of school has been associated with multiple problems in adulthood which can include limited employment opportunities, poverty, and poor health (Freudenberg & Ruglis, 2007). According to 1998 data which established the baseline for Healthy People 2010, only 63% of Hispanic or Latino students and 81% of African American students completed high school. This is in comparison to a high school completion rate of 90% for white students (Kaufman, Kwon, Kline, & Chapman, 1999). Because disparities in high school dropout or completion rates exist, a sub-component of Objective 7-1 was to decrease the disparity in the gap in high school graduation rates between ethnic groups. At the midcourse review of progress, the high school completion rate increased from 85% in 1998 to 87% in 2001, with white non-Hispanic students having the best completion rate at 91%. Hispanic students continued to have the lowest completion rate of 66% in 2001. Data from 2008 showed a positive trend with completion rates for white non-Hispanic students (94.2%), African American students (86.9%) and Hispanic students (75.5%) (Chapman, Laird, & KewalRomani, 2010).

Freudenberg and Ruglis (2007) also suggested that disparities in education exist. The authors examined the number of high school students who did not graduate on time (within 4 high school years) and reported that nearly one third of all students do not
graduate on time. Rates of not completing high school on time were higher for black, Hispanic or Latino, and American Indian students. Regardless of race or ethnicity, good education predicts good health and the less schooling that people have, the higher their risks for engaging in health risk behaviors. The health risk behaviors that have been shown to be the greatest predictors of school dropout include substance abuse, pregnancy, violence, and emotional and behavioral problems (Freudenberg & Ruglis, 2007). Another early predictor of school dropout is poor academic performance. Since there is a reciprocal relationship between academic performance, school dropout rates, and health-risk behaviors, interventions that have the potential to improve academic performance and reduce school dropout rates by improving health of students are crucial.

To reduce school dropout rates Freudenberg and Ruglis (2007) have developed recommendations for school health programs. Several of these recommendations include; implementing and following the Coordinated School Health Program, addressing the key health risk predictors of school dropout in the classroom, supporting health education teachers so that they are better equipped to teach health education courses aimed to reduce school dropout, and to educate key policy makers about the long term benefits of improved high school completion rates.

**Objective 7-2:** Increase the proportion of middle, junior high, and senior high schools that provide school health education to prevent health problems in priority areas to 70% (1994 baseline was 28%).

The specific priority areas outlined in Objective 7-2 are those areas that the CDC has identified as high-risk health behaviors. These are behaviors responsible for more than 70% of illness, disability, and death among adolescents and youth and include:
unintentional injuries and violence, tobacco use, alcohol and illicit drug use, risky sexual behaviors, unhealthy dietary patterns, and inadequate physical activity. In addition to these health risk behaviors, violence, suicide, and environmental health were also identified. The specific health risk behaviors that demonstrated positive progress (closer to 2010 goal) from 1994 to 2000 included unintentional injury and violence, suicide, and tobacco use and addiction. The specific health behaviors that worsened between 1994 and 2000 included alcohol and other drug use, risky sexual behaviors, inadequate physical activity, and school health education provided for all behaviors. Although, improvements in health education are being made in the school setting, Healthy People 2010 invited states and school districts to support quality health education through appropriate policies, teacher training, effective curricula, and regular progress assessment (USDHHS, 2009).

Healthy People 2020 added a new topic, Early and Middle Childhood. This topic breaks down into specific objectives with goals for elementary, middle, and high schools. The specific objectives that relate to improving the quality of high school health education include (USDHHS, 2011):

**EMC-4.1.3:** 84.5% of high schools, including public and private schools, to require newly hired staff who will teach health education to have undergraduate or graduate training in health education. Baseline was established at 76.8% by SHPPS 2006 data.

**EMC-4.2.3:** 80.1% of high schools, including public and private schools, to require newly hired staff who will teach health instruction to be certified, licensed, or endorsed by the State in health education. Baseline was established at 72.8% by SHPPS 2006 data.
Data Trends in Health Risk Behaviors of Youth

The Centers for Disease Control and Prevention (CDC) have identified six categories of priority health risk behaviors for youth and young adults (CDC, 2010c). These priority health risk behaviors are defined by the CDC as “behaviors that contribute to the leading causes of morbidity and mortality among youth and adults, often are established during childhood and adolescence, extend into adulthood, are interrelated, and are preventable” (CDC, 2010c, p. 2). These behaviors are monitored by the Youth Risk Behavior Surveillance System (YRBSS) and include those that contribute to unintentional injuries and violence, alcohol and other drug use, tobacco use, risky sexual behaviors, unhealthy dietary behavior, and physical inactivity.

To monitor the trends in the prevalence of the priority health risk behaviors, the CDC, in 1990, developed the Youth Risk Behavior Survey (YRBS). The survey is distributed by the CDC at the national level every other year to a random sample of ninth through twelfth graders in public and private schools, including charter schools. State and local education and health agencies can also distribute the survey at the state and local levels. The first survey was administered in 1991 while the most recent survey was administered in 2009. Data from the YRBS identifies risk behaviors across all students including the breakdown of health risk behavior prevalence among white, African American, and Hispanic students. The YRBS data is also used to monitor the progress towards achieving fifteen national health objectives and three health indicators identified in Healthy People 2010. Shown in Figure 1 is comparative data from 1991 to 2009, which demonstrates that high school students have become less likely to engage in many health risk behaviors. Data from the 2009 YRBS showed consistent trends (CDC, 2010c).
Figure 1

Prevalence of Selected Adolescent Risk Behaviors for 1991 and 2009

Source: Center for Disease Control and Prevention: http://www.cdc.gov/yrbss
**Injury and violence.** According to the YRBS, 74% of the deaths of individuals between the ages of 10 and 24 results from four causes: motor vehicle crashes (30%), other unintentional injuries (16%), homicide (16%), and suicide (12%) (CDC, 2010c). The types of health risk behaviors in this category include those contributing to unintentional injuries (i.e., seat belt use, helmet use, riding with a driver who has been drinking alcohol, driving while under the influence of alcohol) and behaviors that contribute to violence (i.e., carrying a gun or weapon, fighting, suicide, violent sexual behavior, perceived threat of safety at school). The behaviors that have been monitored from 1991 to 2009 include seat belt use, rode with a driver under the influence of alcohol, carried a weapon, attempted suicide, and not going to school due to safety concerns. Each student group based on race showed a significant decrease in the proportion of students not wearing seat belts with similar decreases seen from 1991 (25.9%) to 2009 (9.7%) for all students. During the 30 days before the survey, 28.3% of all students had ridden with a driver under the influence of alcohol at least one time. Hispanic students were the most likely to have engaged in this risky health behavior (34.2%) with Hispanic females (34.9%) the most likely of all students groups to have engaged in this behavior. In regards to driving a vehicle when under the influence (having been drinking), 9.7% of the students surveyed had done so within 30 days prior to taking the survey.

In regards to those risk behaviors leading to violence, the prevalence of students who carried a weapon, defined as a gun, knife or club on at least one day of the 30 days prior to the survey was 17.5% down from 26.1% in 1991. African American male students (48.3%) were the most likely to be in a fight at least once in the past year followed by Hispanic males (43.8%) and white male students (31.5%).
In terms of suicide, the proportion of students who attempted suicide (at least one time in the last year) was between 8.0% and 9.0% in all years except 1991, 1997, 2007, and 2009 in which the prevalence was lowest at 6.3%. The highest prevalence of suicide attempts was in female Hispanic students at 11.1%. Overall prevalence was higher among ninth grade students than twelfth grade students.

**Alcohol and other drug use.** While trends in prevalence of current alcohol use decreased from 50.8% in 1991 to 41.8% in 2009, the trend in current marijuana use increased from 14.7% to 20.8% for all students between 1991 and 2009. White (44.7%) and Hispanic (42.9%) students were more likely to drink alcohol than African American students (33.4%) and the older the student (higher grade) the more likely they were to drink. Prevalence increased from 31.5% among ninth graders to 51.7% among twelfth graders. Regarding marijuana use, African American male students were the most likely group to use marijuana (25.6%) followed by white male students (23%) and Hispanic male students (25%). Again, marijuana use increased as student grade increased. The proportion of students that reported using other drugs at least once was: inhalants (11.7%), hallucinogens (8%), cocaine (6.4%), ecstasy (6.7%), methamphetamine (4.1%), illegal steroids (3.3%), and heroine (2.5%) (CDC, 2010c).

**Tobacco use.** The most recent results from the 2009 YRBS showed that 26% of students nationwide reported current tobacco use in the form of cigarettes, smokeless tobacco, or cigars. The group most likely to use any type of tobacco product was white males (35.1%). Cigarettes were the most frequently used form of tobacco (19.5%). Trends for current cigarette use for all students from 1991 to 2009 decreased in prevalence from 27.5% to 19.5%. The 2009 prevalence for white students was 22.5%, for
African American students 9.5% and for Hispanic students 18%. As grade level increased so did the use of any type of tobacco product from 19% among ninth graders to 33.1% among twelfth graders (CDC, 2010c).

**Risky sexual behavior.** Sexual behaviors that were measured between 1991 and 2009 include ever having had sexual intercourse, ever having had sexual intercourse with four or more persons, using a condom during the last sexual intercourse, and ever being taught in school about AIDS or HIV infection (CDC, 2010c). The proportion of high school students ever having had sexual intercourse decreased from 54.1% in 1991 to 46% in 2009. The students most likely to having had sexual intercourse in 2009 were African American students (65.2%), followed by Hispanic students (49.1%) and white students (42%). Males were more likely than females across all ethnicities to have had sexual intercourse and 21.6% of high school students who had sexual intercourse during the past three months drank alcohol or used drugs before last sexual intercourse. The proportion of students who were sexually active increased with grade level. The trend of having multiple sexual partners (4 or greater) decreased from 1991 to 2009 at 18.7% and 13.8%, respectively. Again, African American students had the highest prevalence of having had sexual intercourse in all years surveyed with a 2009 prevalence of 28.6%.

Trends of engaging in oral and anal sex were not measured by the YRBS, but data from 2002 indicated that 11% of males and females surveyed between the ages of 15 and 19 had engaged in anal sex with someone of the opposite sex (Mosher, Chandra, & Jones, 2005). The same study indicated that 55% of the males and 54% of the females had engaged in oral sex with someone of the opposite sex. A more recent study by Dake, Price, Ward & Welch (2011) surveyed sexual behavior in mid-western middle and high
school students. Results indicated that 29% of youth surveyed had engaged in oral sex, down from the 2002 data. A similar study reported that 23% of the youth surveyed had engaged in oral sex and 7% had engaged in anal sex (Dake, Price, McKinney & Ward, 2011).

According to a study by Weinstock, Berman, and Cates (2004) and data from the CDC (2011b), there are approximately 19 million new STD infections diagnosed each year with almost half of them occurring among youth between 15 and 24 years of age. With these statistics it is not only important to know how many students are engaging in sexual intercourse but how many are using protection against pregnancy and sexually transmitted diseases (STDs). Data from YRBS 2009 reported that the proportion of currently sexual active students (34.2%) who used a condom during their last sexual intercourse was 61.5%. This is a significant increase from 1991-2003. Although not a statistically significant change since 2003, the 61.5% is the lowest reported use of a condom since 2003 (63%). African American males students were the most likely to use a condom (72.5%) while Hispanic male students were least likely (61.7%). It is important to note that while older students were most likely to engage in sexual intercourse, this group of students was also the least likely to use a condom (CDC, 2010c).

Since abstinence from vaginal, anal, and oral intercourse is the only 100% effective way to prevent HIV, other STDs, and pregnancy it is important for adolescents to be educated on the risks of engaging in these behaviors. Data from the 2009 YRBS reported that the majority of students (87%) received education about AIDS and HIV infection. This percent is higher than in 1991 (83.3%) but lower than the highest prevalence measured at 91.5% in 1997. Overall, the prevalence of having been taught
about AIDS and HIV infection was higher in white students (88.6%). Hispanic female students reported the lowest prevalence of education at 83.2% (CDC, 2010c). Although data indicates that students are being taught about HIV/AIDS, a report by the CDC (2009) estimated that 8,300 young people between 13 and 24 years of age were diagnosed with HIV/AIDS across 40 states.

**Unhealthy dietary behavior.** Although the YRBS has standard questions specific to dietary habits, long term trends in actual dietary behavior was not monitored until 1999. Obesity in children and adolescents is defined as a body mass index (BMI) at or above the 95th percentile using sex- and age-specific growth charts (Kuczmarski, Ogden, & Grummer-Strawn, 2000). The YRBS trend for all students from 1999 to 2009 showed an increase in obesity from 10.7% to 12%, respectively. Students with the highest prevalence of obesity were African American and Hispanic, both at 15.1%. Overweight in adolescents is defined as a BMI between the 85th and 95th percentile using sex- and age-specific growth charts (Kuczmarski et al., 2000). The prevalence of overweight was highest in African American students (21%), followed by Hispanic students (19.6%), and white students (13.6%). Specific dietary behaviors measured by the YRBS include daily number of servings of fruits and vegetables and milk, along with the prevalence of daily non-diet pop consumption. Overall, less one in five of the students surveyed consumed the recommended 5 daily servings of fruits and vegetables (22.3%) during the 7 days before the survey and only 14.5% drank the recommended daily three glasses of milk during the 7 days before the survey. Regarding pop, 29.2% of students had drank a can, glass or bottle of regular pop daily for the 7 days prior to the survey.
Physical activity. The only variable related to physical activity that was measured between 1991 and 2009 was the proportion of students attending physical education class every school day (CDC, 2010c). For all students, there has been a decrease in prevalence from 41.6% to 33.3% between 1991 and 2009. The survey year with the lowest prevalence was 1995 at 25.4%. In 2009, Hispanic students were the most likely students to attend daily physical education class at 40.5%, followed by African American students at 37% and white students at 30.6%. Overall, the prevalence of students who attended a physical education class at least one day per week was 56.4% with males and ninth graders being the most likely to attend.

According to the United States Department of Health and Human Services (2008) children and adolescents should engage in at least 60 minutes of moderate or vigorous physical activity every day, including a minimum of vigorous activity at least three days a week including strengthening activities. Results from the 2009 YRBS indicated that almost one quarter of students surveyed engaged in no physical activity on a weekly basis. African American students were the least likely to engage in any physical activity (31.1%) (CDC, 2010c).

Risk behaviors and academic success. The 2003 and the 2009 National Youth Risk Behavior Survey (YRBS) measured the effects of health-risk behaviors and academic achievement. As a whole, both sets of data presented a negative association between health-risk behaviors and academic achievement in high school students, grades nine through twelve (CDC, 2004 & CDC, 2010b). This association demonstrated a direct, negative, linear relationship between grades received (A, B, C, D/F) and percentage of students engaging in health-risk behaviors. In other words, students with the highest
grades were the least likely to engage in health-risk behaviors. The specific health-risk behaviors linked to lower academic achievement in both 2003 and 2009 included: carried a weapon, current cigarette use, current alcohol use, watched television 3 or more hours per day, and sexual activity (CDC, 2004 & CDC, 2010b). The 2009 YRBS compared physical activity to academic achievement and in 2003 eating habits and academic achievement were compared. The health-risk behaviors that indicated greater risk for minority children (African American and Hispanic) were sexual activity (including unprotected sex and early active date), watching television, physical inactivity, violence, and obesity.

Also supporting the importance of health education in improving academic performance is the California Healthy Kids Survey (CHKS) (Hanson & Austin, 2003). This study examined how standardized test scores in reading, language, and mathematics for 7th, 9th, and 11th graders were related to health risk and resilience data obtained from the CHKS. The results of the study indicated that schools were more likely to raise student test scores when the students were less engaged in certain health risk behaviors. The health variables linked to lower test scores included substance abuse and violence, poor nutrition and low physical activity, and lack of feeling safe at school. The authors of the study concluded that schools seeking to improve academic performance should not ignore the significant role that health education has on improving test scores (Hanson & Austin, 2003).

**Health Education in Schools**

School health programs can be instrumental in addressing many of the problems that young people face. In 1995, the Institute of Medicine defined a school health
program as “An integrated set of planned, sequential, school-affiliated strategies, activities, and services designed to promote the optimal physical, emotional, social, and educational development of students. The program involves and is supportive of families involvement and is determined by the local community, based on community needs, resources, standards, and requirements. The school health program is coordinated by a multidisciplinary team and accountable to the community for program quality and effectiveness” (Bogden, 2006, p. 3). Coordinated school health programs have evolved with time. During the 1980’s, the three-component school health model developed in the early 1900’s was expanded to include eight components (Allensworth & Kolbe, 1987). The eight components are: family/community involvement, health education, physical education, health services, nutrition services, counseling, psychological & social services, healthy school environment, and health promotion for staff.

Charles Basch (2011a) examined the link between academic success and the health of students. Basch emphasizes that health-related problems of youth, especially in urban minority youth, plays a major role in limiting the motivation and ability of youth to learn and therefore, limits the ability of youth to improve personal health outcomes. Basch supports the coordinated school health model and states that these programs must be a fundamental mission of schools. To be most effective in increasing academic achievement and improved health outcomes of youth, the coordinated school health program must be of high quality, strategically planned, and effectively coordinated (Basch, 2011b).

**Health education.** The CDC defines health education as “a planned, sequential, K-12 curriculum that addresses the physical, mental, emotional, and social dimensions of
health” (CDC, 2008). This component of the coordinated school health program is one of the most comprehensive because it addresses school health education policies and programs through curriculum analysis for elementary, middle, and high schools as well as observing teacher training and qualifications. Despite the evidence that health education can improve the overall health of young people, data indicates that a greater emphasis needs to be placed on hiring new staff with appropriate health education training. More schools need to expand their range of health topics being taught and more schools need to follow their state or district policy on health education standards or guidelines (Kann, Telljohann, & Wooley, 2007).

The Centers for Disease Control and Prevention in collaboration with local and state education and health agencies has conducted a biennial national survey (School Health Profiles) of lead teachers and school principals since 1996. Profile assesses trends in school health education (grades 6-12) across five of the eight components of coordinated school health: health education, physical education, health services, healthy and safety school environment, and family and community involvement. One survey item specifically addressing objectives EMC-4.1.3 and EMC-4.2.3 of Healthy People 2020 measures the percentage of secondary school staff who teach health education and the percentage of lead health education teachers that are certified to teach health education. Profiles, 2010 data reported a state median of 82.2% for certified lead health education teachers and a state median of 85.7% for all staff (Brener et al., 2011).

**National health education standards and practices.** It is important that schools, through quality health education, empower students with the skills and knowledge to find, understand, and use information and services to decrease the likelihood of engaging
in risky health behaviors, enhance academic performance, and increase the chances of becoming productive and healthy adults. To assist schools in implementing quality and effective health education curricula, the Joint Committee on National Health Education Standards, a collaboration of several key health education organizations and professionals, developed National Health Education Standards (NHES). The NHES were first published in 1995 and most recently revised in 2007. There are currently eight standards designed to provide a framework for curriculum development and selection, instruction, and student assessment as related to health education. The overall goal of NHES is to improve educational achievement for students and to improve health in the United States (Joint Committee on National Health Education Standards, 2007). The standards provide a conceptual framework through which traditional content areas and the Centers for Disease Control and Prevention priority risk behaviors can be incorporated. The common health education content areas include: community health, consumer health, environmental health, family life, mental/emotional health, injury prevention/safety, nutrition, personal health, prevention/control of disease, and substance use/abuse. The priority adolescent risk behaviors include: alcohol and other drug use; injury and violence; tobacco use; poor nutrition; inadequate physical activity; and risky sexual behavior.

Healthy People 2020 has established one national objective targeting National Health Education Standards at the high school level (USDHHS, 2011):

**EMC-4.3.3:** 10.5% of high schools, including public and private schools, to require cumulative instruction in health education that meet U.S. National Health Education Standards. Baseline was established at 6.5% by SHPPS 2006 data.
The eight standards are modified according to grade level, supported by a rationale, and measured by specific performance indicators. The eight standards along with a brief description include:

- **Standard #1**: Students will comprehend concepts related to health promotion and disease prevention to enhance health. This standard includes essential concepts that are based on established health risk behaviors among youth.

- **Standard #2**: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors. This standard focuses on identifying and understanding the diverse internal and external factors that influence health practices among youth including personal values, beliefs, and perceived norms.

- **Standard #3**: Students will demonstrate the ability to access valid information, products, and services to enhance health. This standard focuses on how to identify and access valid health resources and to reject unproven sources.

- **Standard #4**: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks. This standard focuses on how responsible individuals use verbal and non-verbal skills to develop and maintain healthy personal relationships.

- **Standard #5**: Students will demonstrate the ability to use decision-making skills to enhance health. This standard includes the essential steps that are needed to make healthy decisions as prescribed in the performance indicators.
- Standard #6: Students will demonstrate the ability to use goal-setting skills to enhance health. This standard includes critical steps needed to achieve both short-term and long-term health goals.

- Standard #7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks. This standard promotes the acceptance of personal responsibility for health and encourages the practice of healthy behaviors.

- Standard #8: Students will demonstrate the ability to advocate for personal, family, and community health. This standard helps students develop important skills to target their health enhancing messages and to encourage others to adopt healthy behaviors.

Performance indicators are designed to identify what students should know or be able to do at the end of each grade span per standard. The four grade spans include: pre-K through grade 2; grade 3 through grade 5; grade 6 through grade 8; and grade 9 through grade 12. The NHES provides a framework for an effective health education program, but it is the responsibility of each school to implement successful health education programs. Successful health education programs will provide students with optimal opportunity to develop the skills and learn the content outlined in each standard and performance indicators. In Profiles, 2010, one survey item reports on the percentage of secondary schools with a health education curriculum that addresses each specific health skill. Results from Profiles, 2010, reported that the state median of teaching all 8 skills was 66.6%. Individual skill state median ranged from 84.6% to 94.7% (CDC, 2010a).
Effective health education curricula are essential for successful health education programs. To assist schools in implementing quality and effective health education curricula, the Centers for Disease Control and Prevention, Division of Adolescent Health (CDC-DASH) and experts in the field of health education reviewed effective health education programs and curricula and found that an emphasis on scientific facts is not the most effective means of improving health (Joint Committee on National Health Education Standards, 2007). As a result of the review process, fifteen characteristics of an effective health education curriculum were identified. These characteristics include:

- Focuses on clear health goals and related behavioral outcomes.
- Is research-based and theory driven.
- Addresses individual values, attitudes, and beliefs that support positive health behavior.
- Addresses individual and group norms that support health-enhancing behaviors.
- Focuses on reinforcing protective factors and increasing perceptions of personal risk and harmfulness of engaging in specific unhealthy practices and behaviors.
- Addresses social pressures and influences.
- Builds personal and social competence and self-efficacy by addressing skills.
- Provides functional health knowledge that is basic, accurate, and directly contributes to health-promoting decisions and behaviors.
- Uses strategies designed to personalize information and engage students.
- Provides age-appropriate and developmentally appropriate information, learning strategies, teaching methods, and materials.
• Incorporates learning strategies, teaching methods, and materials that are culturally inclusive.

• Provides adequate time for instruction and learning.

• Provides opportunities to reinforce skills and positive health behaviors.

• Provides opportunities to make connections with other influential persons.

• Includes teacher information and plans for professional development and training to enhance effectiveness of instruction and student learning.

The Joint Committee on National Health Standards also developed six access and equity principles necessary for student attainment of the National Health Education Standards. These principles impact student achievement in health education and are essential components for effective implementation of a quality health education program. The six principles include:

• Environment and Climate: Facilities must be conducive to learning. (i.e. appropriate classroom, access to tools and resources necessary for learning.

• Teaching: Teachers will be competent in the delivery of health instruction, including the skills and passion for the subject.

• Curriculum: All students, pre-K through grade 12 will have access to health education instructional programs guided by a curriculum grounded in the NHES.

• Assessment: Student achievement of the NHES will be accurately and fairly measured.

• Technology: All students will have access to technology to explore, analyze, and communicate about health issues.
• Learning: All students will have access to programs that enable learning with the goal of practicing healthy behaviors.

**Current Health Education Practices in the United States**

**School Health Policies and Programs Study.** In 1994, the Centers for Disease Control and Prevention (CDC) began monitoring school health programs on a national level with the induction of the first School Health Policies and Programs Study (SHPPS). The School Health Policies and Programs Study was the first national study to measure policies and programs across five school health program components: health education, physical education, health services, nutrition services, and health policies related to tobacco, alcohol, other drug use and violence in middle schools and high schools (CDC, 1996). Policies and programs were measured at the state, district, school, and classroom levels. Data from classrooms were limited to middle and high schools. Questionnaires were mailed to the state education agency in all 50 states and the District of Columbia and to a nationally representative sample of 502 school districts. In addition, personal interviews were conducted with staff and teachers that taught health education. Of the teachers interviewed, 46.9% taught courses primarily focused on specific health education topics and 53.1% of teachers interviewed integrated some health education with a primary focus on another subject such as biology.

The School Health Policies and Programs Study (SHPPS) is currently conducted every 6 years. In 2000, three additional health program components; mental health and social services, faculty and staff health promotion, and family and community involvement were added. Study methods consisted of administering questionnaires to
elementary, middle, and high schools at the state, district, school, and classroom levels (Kann, Brener, & Wechsler, 2007).

Consistent with SHPPS 2000, the 2006 survey measured policies and programs across all eight components of a coordinated school health program but also included three additional components: crisis preparedness and response, the physical school environment, and school climate. The two health program components compared at the classroom level were health education and physical education. The other health program components were limited to data collected at the state, district and school levels (Kyle et al., 2007).

In SHPPS 2006, computer assisted telephone interviewing (CATI) was added as a means of data collection at the state and district levels. State level data were collected from education agencies in all 50 states plus the District of Columbia, district level data were collected from a nationally represented sample of public school districts, and school data from a nationally represented sample of both public and private schools. State and district level respondents were typically individuals with the most knowledge about policies and programs. School and classroom level respondents were typically appointed by the principal based on individual knowledge of a particular component. Classroom level data were collected from teachers covering required health education and physical education classes in elementary schools and from teachers who taught courses in health or physical education.

Teaching characteristics (prevalence, method, curriculum, etc.) of fourteen specific health education topics were assessed in SHPPS 2006. The fourteen health topics included: alcohol-or other drug-use prevention; asthma awareness; emotional and mental
health; food-borne illness prevention; HIV prevention; human sexuality; injury prevention and safety; nutrition and dietary behavior; other STD prevention; physical activity and fitness; pregnancy prevention; suicide prevention; tobacco-use prevention; and violence prevention (Kann, Telljohann, & Wooley, 2007). Schools were assessed based on grade level; elementary (included any grades K through 4), middle (included grades 7 or 8) and high school (included grades 10, 11 or 12). At the school level, health education questionnaires assessed use of school health education standards, guidelines, and objectives; required health instruction; staffing and development; health education collaboration and promotion; and use of a school health coordinator. At the classroom level, health education questionnaires assessed general characteristics of health education classes; specific health topics taught; teaching methods; and health education teacher credentials, development, and education.

Results of SHPPS (2006). The proportion of schools following health education standards to develop curricula or guidelines for health education was 85%, with high schools the highest at 88.6%. Of the total number of schools following health education standards, 70% specifically followed National Health Education Standards (NHES). Although the total number of schools following health education standards was relatively high, less than two thirds of the schools studied required instruction in all 14 identified health topics. The type of school most likely to require classroom instruction on all 14 topics was high school (35.8%), followed by middle school (20.6%), and then elementary school at 6.4%. A number of states at the high school level required one or zero health topics to be taught. These states included: Alaska, Arizona, California, Colorado, Kansas, North Dakota, Ohio, South Dakota, and Wyoming. In addition, only a small number of
states required students to be tested on health topics. According to SHPPS 2006, the only states that required testing of health topics in elementary, middle and high schools included: Idaho, Kentucky, Maine, Missouri, Pennsylvania, Rhode Island, South Carolina, Utah, Vermont, Washington, and West Virginia (testing is only required at middle and high school levels) (CDC, 2006).

When assessing which of the fourteen health topics were most and least likely to be taught at the elementary, middle and high school levels, the least likely health topics to be taught across all school levels were asthma awareness and food-borne illness protection (Kann et al., 2007). The topic taught most often at the elementary level was violence prevention and at both, middle and high school level, the health topic most frequently taught was alcohol–use and other drug use prevention. The health topics that were taught at least 70% of the time in more than two thirds of schools at each level, elementary, middle and high schools are presented in Table 3.

Teachers with health education credentials and certification can offer a value-added component to the health education program. SHPPS 2006 data revealed an increase in the total proportion of schools that required new teachers that teach health topics to be either state certified, licensed, or endorsed in health education from 35% in 2000 to 45% in 2006 (Kann et al., 2007). Nationwide, teachers who taught health education topics had a median of 10.4 years of experience teaching health topics in elementary schools and a median of 7.9 years in both, middle and high schools. In terms of credentials and education, 67.8% of elementary school teachers teaching health education were certified, licensed, or endorsed by the state to teach health education along with 67.1% of middle and high school teachers. Approximately 95% of elementary
Table 3

**Health Topics Taught at the School Level at Least 70% of the Time in More than two thirds of Schools Studied**

<table>
<thead>
<tr>
<th>Health Topic</th>
<th>Elementary School</th>
<th>Middle School</th>
<th>High School</th>
</tr>
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<tbody>
<tr>
<td>Alcohol use or other drugs</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Asthma awareness</td>
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<td></td>
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<tr>
<td>Emotional and mental health</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Food-borne illness prevention</td>
<td></td>
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<tr>
<td>HIV prevention</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Human sexuality</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Injury prevention and safety</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Nutrition and dietary behavior</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Other STD prevention</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Physical activity and fitness</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Pregnancy prevention</td>
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<td></td>
<td>X</td>
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<tr>
<td>Suicide prevention</td>
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<td></td>
<td>X</td>
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<tr>
<td>Tobacco-use prevention</td>
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<tr>
<td>Violence prevention</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

X = Health topics taught at least 70% in more than two thirds of schools studied. Adapted from data from the School Health Policies and Programs Study 2006. *Journal of School Health, 77, 408- 434.*
school teachers teaching health education had an undergraduate degree with only 11.4% majoring in health education. At the middle and high school level, 27.4% of the 99.2% of teachers with an undergraduate degree majored in health education.

In addition to identifying staff teaching credentials/education and the specific health education topics being taught, SHPPS 2006 also assessed how health education topics were being taught in the classroom. Across all school levels the most reported method of teaching health education was group discussion followed by group activities. The greatest changes in teaching methods from SHPPS 2000 to 2006 were the increase in computer assisted instruction (from 40.5% to 62.2%), the internet (from 52.7% to 77.7%) and use of behavior change contracts (from 48.1% to 68%).

Overall, the results of SHPPS 2006 suggested that schools, in general, are not incorporating or enforcing strong enough school health policies regarding health education to appreciate the benefits. Positive changes that are being made at the state and district levels must be supported and extend into the school and classroom levels for optimal changes in health education to occur.

School Health Profiles. The School Health Profiles is a system of surveys conducted every two years with middle and high school principals and lead health education teachers in secondary schools. The survey assesses school health policies and practices across five key areas: school health education requirements and content; physical education requirements; school health policies related to HIV infection; tobacco-use prevention and nutrition; asthma management activities; and family and community involvement. The most recent study was conducted in 2010.
Some key findings of the 2010 School Health Profiles data which provides a snapshot of current health education practices includes (CDC, 2010a):

- 85% of staff teaching health education was certified
- 52% of schools required students to take 2 or more health education courses
- Amount of health education taught decreased from 65.6% in ninth grade to 18.2% in twelfth grades with the most frequently taught health topics being physical activity and fitness and nutrition and dietary behaviors.

**Barriers to Health Education in Schools**

Health and wellness are not considered core subjects and as a result of the No Child Left Behind Act (NCLB), health education may often not be a part of the typical school day. The barriers created by federal mandates and other factors have led to a decrease or lack of health and physical education in schools. The North Carolina Association for the Advancement of Health Education (NCAAHE) has recognized several specific barriers of teaching health education in schools (Breitenstein, 2008). The first barrier, which may vary by state, is the lack of health requirements after 9th grade or lack of a statewide comprehensive health curriculum. Other barriers include sharing scheduling and grading of health with physical education, shortage of classrooms, competing for recommended physical activity minutes with health education classes, lack of funding, not implementing a coordinated school health program, and lack of credentialed teachers. Schools facing financial difficulties often attempt to reduce costs by assigning the responsibility of teaching health to physical education teachers or hired athletic coaches.
The North Carolina Association for the Advancement of Health Education has also proposed solutions for improving health education in schools (Breitenstein, 2008). Solutions range from teacher credentials and professional development to curriculum and administrative changes. A proposed solution is to encourage college students to graduate with a dual degree in health education and physical education so that they are qualified to teach both subjects. Another solution is to provide continuing education opportunities to already credentialed health education teachers along with providing opportunities for existing teachers to receive the appropriate training to become licensed or certified. Incorporating evidence-based curricula standards for specific health education topics and following National Health Education Standards along with the eight components of the Coordinated School Health Program are proposed curriculum changes. Administrative solutions include collaborating with funding agencies to support health education programs and securing state-funded school health coordinators. If grants are awarded it is suggested that the funds be directed towards administrative support, purchasing of quality instructional materials, and ongoing professional development of staff.

**Health Behavior Theories**

Theories help explain behavior and offer ways to achieve a desired behavior change. The two theories used in this study are the Transtheoretical Model and the Health Belief Model. The Transtheoretical Model as used in this study examines charter schools’ current teaching practice (i.e. stage) regarding health education. Key concepts used in this study taken from the Health Belief Model include perceived benefits and perceived barriers as applied to teaching health education in charter schools.
The Transtheoretical Model was developed in the 1970’s and was first applied to studies looking at smoking and smoking cessation (Glanz, Rimer, & Lewis, 2002). A key construct of the Transtheoretical Model includes Stages of Change. The Stages of Change represent behavior as taking place over time through a series of 6 stages. The first stage is *precontemplation*, during which an individual does not plan to make a change. The second stage is *contemplation*, during which an individual is thinking about making a change within the next six months. The third stage is *preparation*, during which an individual is planning to make a change within the next thirty days and has taken some steps towards that change. The fourth stage is *action*, during which the individual has made a change, but it has been less than six months since the change has been made. The fifth stage is *maintenance*, during which the individual has made a change and has been maintaining the new behavior for more than six months. The final stage is relapse, during which the individual returns to the pre-existing behavior.

The Health Belief Model, a value-expectancy theory, was originally developed in the 1950s by psychologists as an attempt to explain why people do not participate in programs aimed to prevent and detect disease (Glanz et al., 2002). Key concepts of the Health Belief Model include: *perceived susceptibility* (one’s belief regarding the risk of developing a health condition); *perceived severity* (one’s belief of how serious the health condition would be), *perceived benefits* (one’s belief of how effective a behavior would be in preventing the health condition); *perceived barriers* (one’s belief regarding tangible or psychological costs that may impede the performance of a behavior; and *cues to action* (triggers that increase the chance of performing the behavior).
Summary

In addition to being a national health objective, the role of health education in schools is supported by an extensive list of organizations. While comparative data indicates that high school students in 2009 were less likely to engage in several health risk behaviors than in 1991, the need for health education in schools still exists. A review of the literature demonstrates that providing health education in schools can decrease health risk behaviors in youth, improve academic performance and reduce high school dropout rates.

Despite the proven benefits of health education, data from the 2006 School Health and Policies Programs Study and the 2010 School Health Profiles indicate that health education curricula the amount (number of health topics) covered in high school is insufficient. Nine states cover at most, one health topic at the high school level and only eleven states require testing on health topics (CDC, 2006). While it was reported in SHPPS 2006, that on average 75% of all states and 82% of all high schools had health education goals addressing the health skills outlined in the National Health Education Standards the quality and/or consistency of the curricula and assessment of student performance was not measured (Kann et al., 2006).

As the number of charter schools continue to grow it is important to research and collect data on the quality of health education practices and policies in charter schools. This is especially important as over half of charter schools are located in urban geographic locations, where socioeconomic status tends to be lower and minority children tend to attend at higher rates. To date, there is no published research that specifically measure health education in charter schools.
Chapter 3

Methods

This chapter describes the methods that were used in the current study. The topics that will be addressed include: 1) Subjects and Sampling; 2) Instrument; 3) Instrument Testing; 4) Procedures; and 5) Data Analysis.

Subjects and Sampling

A directory of charter schools was obtained from the National Charter School Online Directory managed by the Center for Education Reform. The Center for Education Reform is a public, non-profit 501c(3) organized in the District of Columbia in 1993. The directory is the only national database of charter schools that is updated quarterly. Charter school information is obtained from a variety of sources including state departments of education. The directory included charter schools in all states except for those states that did not have charter schools in 2009: Alabama, Kentucky, Maine, Mississippi, Montana, Nebraska, North Dakota, South Dakota, Vermont, Washington, and West Virginia.

Criteria from this directory that were used for selecting charter schools for the current study included grade, specialty, status, and state (Center for Education Reform [CER], 2009). Grade options used for this study included “combined” (all grades) and “high school”. Since the study was exclusive to high school students, the option categories of “elementary” and “unknown” were not used to select charter schools for this study. Status selection included only charter schools that were currently open. “Approved” and “closed” selection options were excluded from selection. Charter school selection was not limited based on specialty area (Montessori, art-based, core knowledge,
special needs, virtual/cyber, vocational). Therefore, all charter schools eligible under the
aforementioned categories were selected. At the end of the selection process a list of
open, all specialty, high schools and a list of open, all specialty, combined schools per
state was created. “Combined” schools are schools that are not high school exclusive and
may include elementary, middle and high school or middle and high school students.

A total of 2,013 schools met the inclusion criteria. The results of an *a priori*
sample size analysis indicated that 350 completed surveys were needed for adequate
power to generalize the results to the population (Raosoft, Inc). This was based on a 95%
confidence level and a 5% margin of error to minimize the chance of type II error (Price,
Dake, Murnan, Dimmig, & Akpanudo, 2005). The estimated *a priori* return rate was
50%. Therefore, the investigator determined that 700 schools should be included in the
sample. Due to many unknown factors with charter schools, the investigator added 50
schools to the sample to increase the odds that the targeted number of returns (350)
would be reached. Therefore, a total of 750 schools were included in the final sample.

To provide a degree of standardization and proportional allocation to the sampling
process, the total number of charter schools in each state in the United States with charter
schools was divided by the total number of school aged children in that state (grades 6-
12). In those states that only had high school charter schools, the total numbers of school
aged children in grades 9 through 12 was used. The number of school aged children in
each state with charter schools was derived from the State Education Profiles presented
by the U.S. Department of Education, National Center for Education Statistics. The data
was based on census data from 2006-2007 (U.S. Department of Education, 2008).
Based on each state’s quotient, the states were divided into quartiles. To account for potential alphabetical bias, the names of charter schools were randomized. Every third “combined” school and every third high school were then selected from each quartile group. A total of 180 schools were randomly selected from each quartile group (i.e., 126 “combined” schools and 54 high schools). More “combined” schools were selected because the database indicted there were more “combined” charter schools which included grades 9-12, than stand alone charter high schools (grades 9-12). Therefore, 70% of the total sample of schools were “combined” schools (n= 525) and 30% of the schools were high schools (n=225).

To increase response rate all selected schools were contacted by telephone prior to mailing the questionnaire. The phone calls were made to verify the following information: school status (open or closed), school name, mailing address, fax number, name of the school leader and/or health education teacher. If the charter school identified a health education teacher or a person responsible for teaching health education, the questionnaire was mailed to that individual. If the person on the phone could not identify a health education teacher or another person responsible for teaching health education, the questionnaire was mailed to the school leader. A total of 150 charter schools could not be reached by telephone due to disconnected phone numbers. Each school with a disconnected phone number was replaced in the sample by a similar type school (combined grades or high school) from its quartile group. An attempt to contact the replacement schools for information verification was not made.

**Instrument**

A four-page, 28 item survey instrument was developed from a comprehensive
review of the literature dealing with health education and charter schools. The survey instrument for this current study is presented in Appendix B. The primary purpose of the survey instrument was to assess the amount and content of health education being taught in charter schools in the United States. The first item of the instrument asked for the current number of full time teachers at the school. Items 2-4 of the instrument measured current health education policy at the district, state and charter high school level, respectively. Item 5 on the instrument used Stages of Change to assess the readiness of the charter school to teach health education. Respondents were asked to select one stage from a list of six. Item 6 asked the respondents to identify barriers that prevent their charter school from offering more health education. Nine specific barriers were provided as well as an “other” option for the respondent to write in barriers not identified. In item 7 respondents were asked to select the percentage of high school teachers who were certified or licensed to teach the subject in which they were teaching, including the option of I don’t know. Item 8 asked respondents to select the grades (9-12) in which health education was taught, including an option of “not taught”. If the respondent selected “not taught” they were directed to skip items 9 through 12 and continue with item 13 on page 3 of the instrument. If health education was being taught in any grades (9–12) the respondent was asked to continue on to item 9. Item 9 consisted of 14 subgroups (a-n) of health related topics. This item asked the respondent to identify the amount of time (defined as number of hours) in which each of the 14 identified health-related topics were being covered in grades 9-12. The response choices included a range of 0 to 11+ hours. The next two items identified who was teaching high school health education at the charter school (10) and what percent of teachers teaching health education were certified
or licensed by the state to teach health education (11). Item 12 asked the respondent to select the health skills being taught as part of the health education curriculum. Respondents were asked to select all that apply along with a “none of the skills” option. Item 13 asked about the possible benefits (7) of offering health education classes, including an “other” option to write in additional benefits not identified. Respondents could select multiple benefits. Item 14 asked the respondent to identify possible resources that they would find helpful to improve current high school health education in their charter school.

There were fourteen items included in the demographics and background section of the instrument. The first seven items (15-21) focused on school demographics and included: grades in the school, type of charter school, number of years the charter school has been open, school setting (urban, suburban, rural), enrollment number, student race/ethnicity prevalence (%), and charter school authorizer/sponsor. The last 7 items (22-28) identified personal characteristics of the respondent and included: title at school, race/ethnicity, number of years at the charter school, number of teaching and administrative years, sex, professional degrees held, and overall opinion of the relationship between health education and academic achievement.

**Instrument Testing**

To establish content validity the survey instrument was reviewed by four experts (Appendix C) in the areas of survey research, charter school leadership, and/or health education. A copy of the survey instrument was sent as an attachment and e-mailed to the selected experts. Included in the e-mail with the survey was a statement asking for a review of the instrument, including soliciting suggested changes to items or suggestions
to delete or add (Appendix D). Modifications to the instrument were made after receiving the experts’ feedback.

Stability reliability was assessed by using a sample of charter schools (n=40) from the National Charter School Online Directory presented by the Center for Education Reform (2009). Twenty-eight “combined” schools and 12 high schools were randomly selected from the master list. These charter schools were excluded from the primary sample of the current study. The number of each type of school was matched to the ratio of type of school used for the primary study. Once selected, the schools were called to verify open status and contact information. If a school was found to not be a valid selection (unable to reach), another school, of the same type, was randomly selected to replace it. The 40 schools were mailed a copy of the survey along with a letter explaining the intent of the study, an incentive of a two dollar bill, and an addressed stamped return envelope. One week after the completed survey was returned, another copy of the survey was mailed to the same school along with a stamped return envelope and another two dollar bill. A third letter, one month after the initial letter and survey were sent, along with a stamped return envelope was mailed to those schools that had not returned one or both surveys.

A fourth attempt to increase the number of matched survey pairs was needed. The fourth attempt required contacting charter schools sponsored by the Ohio Council of Community Schools and not identified on the original master list. Once a list with contacts was obtained, e-mails were sent or phone calls were made requesting assistance. Those schools that offered assistance were sent a survey via e-mail or regular mail per their preferred method. Those schools that completed one survey were sent another
matching survey within 10 days. Internal consistency reliability was assessed by correlation coefficients for groups of items (Table 4) and percentage of agreement (Table 5). A total of thirty matched pairs were received.

**Procedures**

Approval from the University Human Subjects Institutional Review Board (IRB) was obtained prior to the start of data collection (Appendix A). Once approved, a four-wave mailing process was used to collect the data. The first wave consisted of a personalized, hand signed cover letter explaining the study, a green colored survey instrument in booklet format, a self-addressed stamped envelope, and a $1 incentive. If a contact name was obtained from the initial verification phone call, the letter was personally addressed to that person. If no name was provided, the letter was addressed to school leader/health education teacher. The personalized letter was printed on Ohio Council of Community Schools letterhead with signatures by Allison Perz, Executive Director, Timothy R. Jordan, Ph.D., faculty advisor for this study and Lisa Ambrosetti, doctoral candidate.

A second wave was sent to first wave non-respondents two weeks after the first wave. The second wave consisted of a copy of the survey instrument, a personalized, signed reminder letter of invitation, and a self-addressed stamped return envelope. A third wave, sent approximately two weeks after the second wave, included a color matched postcard reminder to the non-respondents. Research has shown that multiple wave mailings, monetary incentives, and colored paper have been shown to be effective in increasing survey response rates (Edwards et al, 2002; King, Pealer, & Bernard, 2001; Erwin & Wheelright, 2002, & Price et al, 2004). After the initial three waves, the
Table 4

Stability Reliability Correlations for the Survey Instrument

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Pearson Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Education Charter Policy (Q4)</td>
<td>.94</td>
</tr>
<tr>
<td>Amount of Time Teaching (Q9)</td>
<td>.89</td>
</tr>
<tr>
<td>Health Education District Policy (Q3)</td>
<td>.79</td>
</tr>
<tr>
<td>Certified/Licensed in Health Education (Q10)</td>
<td>.75</td>
</tr>
<tr>
<td>Health Education State Policy (Q2)</td>
<td>.74</td>
</tr>
<tr>
<td>Who is Teaching Health Education (Q10)</td>
<td>.72</td>
</tr>
<tr>
<td>Certified/Licensed in Topic Teaching (Q7)</td>
<td>.38</td>
</tr>
</tbody>
</table>

n = 15 matched pairs
### Table 5

**Percentage Agreement for the Survey Instrument**

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Percentage Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stages of Change (Q5)</td>
<td>100%</td>
</tr>
<tr>
<td>Number of Perceived Barriers (Q6)</td>
<td>91%</td>
</tr>
<tr>
<td>Health Education Grades Taught (Q8)</td>
<td>88%</td>
</tr>
<tr>
<td>Number of Perceived Benefits (Q13)</td>
<td>75%</td>
</tr>
<tr>
<td>Health Skills (Q12)</td>
<td>71%</td>
</tr>
<tr>
<td>Helpful Resources (Q14)</td>
<td>71%</td>
</tr>
</tbody>
</table>

n = 15 matched pairs
response rate was lower than the targeted goal of 350 completed surveys. Therefore, a fourth wave was used. The fourth wave consisted of an e-mail request, with the survey attached, to identified school leaders or health education teachers with e-mail addresses. E-mail addresses were obtained from the charter school website. Twenty schools with identified school leaders or health education teachers were randomly selected from the non-respondents in the first three waves. The three letters and e-mail are presented in Appendices H-K. The collection of surveys occurred from April 2010 through July 2010.

Data Analysis

Data from the collected survey instrument was entered into SPSS for Windows Version 15.0. Descriptive statistics were used to test hypotheses 1.0, 6.0, and 7.0. Independent samples t-tests were used to test hypotheses 2.3-2.5, 2.7, 3.3-3.5, 3.7, 5.3-5.5, 5.7. ANOVA tests were used to test hypotheses 2.0-2.2, 2.8, 3.0-3.2, 3.6, 5.0-5.2, 6.1, and 7.1. Chi-square analyses were used to test hypotheses 1.1-1.6. Pearson correlation coefficients were used to test hypotheses 2.6, 5.6, 6.2, 6.5, 7.2 and 7.3. Multiple linear regression was used to test hypothesis 4.0.
Chapter 4

Results

This chapter presents the results of the statistical analysis of the research data. The sections in this chapter include: 1) Response Rate; 2) Demographic and Background Characteristics of the Respondents; 3) Characteristics of the Responding Charter Schools; 4) Characteristics of the Schools’ Health Education Program; 5) Stages of Change for Practice of Health Education; 6) Time Spent Teaching Specific Health Topics; 7) Health Skills Taught in Health Education Class; 8) Barriers and Benefits to Teaching Health Education; 9) Testing the Research Questions and Hypotheses; 10) and Summary.

Response Rate

Surveys were mailed to 750 randomly selected charter schools. Of the surveys mailed, 66 were returned undeliverable and 4 were returned with notes indicating the schools did not have students in grades 9-12. Thus, the final response rate was 44% (300/680) with representation from 37 of the 39 states and the District of Columbia with charter schools. Due to receiving 50 less surveys than required for the a priori sample size estimation (i.e., 350), a post hoc sample size analysis was conducted. Obtaining 300 completed surveys instead of 350 caused the margin of error to increase to 5.2% (versus 5% in the a priori analysis) while maintaining a confidence level of 95%.

Demographic and Background Characteristics of Respondents

The respondents can be described as bachelor’s degree trained (82.3%); Caucasian (74.7%); female (51.3%); and with 5 or fewer years of teaching experience (35.7%) (Table 6). The most frequently cited job titles of respondents included health teacher (29.7%),
Table 6

Demographics & Respondent Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>154</td>
<td>(51.3)</td>
</tr>
<tr>
<td>Male</td>
<td>108</td>
<td>(36.0)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>38</td>
<td>(12.7)</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>224</td>
<td>(74.7)</td>
</tr>
<tr>
<td>Black/African American</td>
<td>26</td>
<td>(8.7 )</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>23</td>
<td>(7.6 )</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>5</td>
<td>(1.7 )</td>
</tr>
<tr>
<td>Bi-Racial</td>
<td>1</td>
<td>(0.3 )</td>
</tr>
<tr>
<td>Other (native American, middle eastern)</td>
<td>11</td>
<td>(3.7 )</td>
</tr>
<tr>
<td>Not Reported</td>
<td>10</td>
<td>(3.3 )</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Teacher</td>
<td>89</td>
<td>(29.7)</td>
</tr>
<tr>
<td>Classroom Teacher</td>
<td>83</td>
<td>(27.7)</td>
</tr>
<tr>
<td>Principal</td>
<td>54</td>
<td>(18.0)</td>
</tr>
<tr>
<td>School Leader/Chief Administrator Officer</td>
<td>28</td>
<td>(9.3 )</td>
</tr>
<tr>
<td>Lead Teacher</td>
<td>24</td>
<td>(8.0 )</td>
</tr>
<tr>
<td>School Nurse</td>
<td>11</td>
<td>(3.7 )</td>
</tr>
<tr>
<td>Curriculum Specialist</td>
<td>10</td>
<td>(3.3 )</td>
</tr>
<tr>
<td>Other (e.g., physical education teacher, administrator assistant)</td>
<td>81</td>
<td>(27.0)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>2</td>
<td>(0.7 )</td>
</tr>
<tr>
<td><strong>Degree(s) Held</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associates</td>
<td>47</td>
<td>(15.7)</td>
</tr>
<tr>
<td>Bachelors</td>
<td>247</td>
<td>(82.3)</td>
</tr>
<tr>
<td>Master</td>
<td>149</td>
<td>(49.7)</td>
</tr>
<tr>
<td>Doctorate</td>
<td>15</td>
<td>(5.0 )</td>
</tr>
<tr>
<td>No College Education</td>
<td>3</td>
<td>(1.0 )</td>
</tr>
<tr>
<td><strong>Years Employed by Current Charter School</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>194</td>
<td>(64.7)</td>
</tr>
<tr>
<td>6-10</td>
<td>81</td>
<td>(27.0)</td>
</tr>
<tr>
<td>11-20</td>
<td>21</td>
<td>(7.0 )</td>
</tr>
<tr>
<td>21-25</td>
<td>1</td>
<td>(0.0 )</td>
</tr>
<tr>
<td>Not Reported</td>
<td>3</td>
<td>(1.0 )</td>
</tr>
</tbody>
</table>
### Table 6: Continued

#### Demographics & Respondent Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years of Experience in Teaching</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>107</td>
<td>(35.7)</td>
</tr>
<tr>
<td>6-10</td>
<td>77</td>
<td>(25.7)</td>
</tr>
<tr>
<td>11-20</td>
<td>62</td>
<td>(20.7)</td>
</tr>
<tr>
<td>21-25</td>
<td>16</td>
<td>(5.3)</td>
</tr>
<tr>
<td>more than 25 years</td>
<td>22</td>
<td>(7.3)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>16</td>
<td>(5.3)</td>
</tr>
<tr>
<td><strong>Years of Experience in Administration</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>78</td>
<td>(26.0)</td>
</tr>
<tr>
<td>6-10</td>
<td>38</td>
<td>(12.7)</td>
</tr>
<tr>
<td>11-20</td>
<td>38</td>
<td>(12.7)</td>
</tr>
<tr>
<td>21-25</td>
<td>5</td>
<td>(1.7)</td>
</tr>
<tr>
<td>more than 25 years</td>
<td>5</td>
<td>(1.7)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>136</td>
<td>(45.2)</td>
</tr>
</tbody>
</table>

N = 300

Percentages may not equal 100% due to rounding
classroom teacher (27.7%), and other (27.0%). The “other” category included job titles of school leader/chief administrator officer (9.3%), and physical education teacher (9.0%).

The most frequently cited academic majors at the bachelor’s level were health and physical education (16.6%) and biology (9.3%). Nearly half (49.7%) of respondents had master’s degrees and 5% had doctorate degrees (Table 6). All respondents holding a doctoral degree indicated a degree in educational leadership or education administration. The most frequently cited degree majors among respondents with graduate degrees were education (20.1%), administration (15.4%) and educational leadership (12.1%). Of the respondents with a master’s degree (4.7%) had a degree in health.

**Characteristics of Charter Schools**

The most prevalent types of charter schools were those that focused on core knowledge (40.1%) followed closely by the “other” category at 29.0% (Table 7). The most frequently identified “other” types of schools were “college prep” (31.0%) followed by “at-risk/drop out recovery” (20.1%). The least prevalent types of schools responding (<10%) were “virtual/cyber”, “art”, “vocational”, “special needs”, “athletic”, and “Montessori”.

Approximately one half (49.3%) of the schools reported being located in an urban area with the remaining schools equally divided between suburban and rural at 24.0% and 23.3%, respectively. Approximately one-third of schools reported that the racial composition of their students was primarily Caucasian. Similarly, about one-third of schools reported that their student bodies were primarily minority students. The majority of schools reported having more than 10 full time teachers with a plurality of schools (29.7%) reported having more than 25 full time teachers. The majority (70.3%) of schools had at least 50% of their teachers certified or licensed by the state in subjects that they teach. Two out of every 5
Table 7
Characteristics of Charter Schools

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description of School</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Knowledge</td>
<td>122</td>
<td>(40.6)</td>
</tr>
<tr>
<td>Virtual/Cyber</td>
<td>26</td>
<td>(8.7)</td>
</tr>
<tr>
<td>Art</td>
<td>19</td>
<td>(6.3)</td>
</tr>
<tr>
<td>Vocational</td>
<td>17</td>
<td>(5.7)</td>
</tr>
<tr>
<td>Special Needs</td>
<td>14</td>
<td>(4.7)</td>
</tr>
<tr>
<td>Athletic</td>
<td>5</td>
<td>(1.7)</td>
</tr>
<tr>
<td>Montessori</td>
<td>4</td>
<td>(1.3)</td>
</tr>
<tr>
<td>Other (math &amp; science, technology, at risk)</td>
<td>87</td>
<td>(29.0)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>6</td>
<td>(2.0)</td>
</tr>
<tr>
<td><strong>Years School has been Open</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>60</td>
<td>(20.0)</td>
</tr>
<tr>
<td>6-10</td>
<td>139</td>
<td>(46.3)</td>
</tr>
<tr>
<td>11-20</td>
<td>83</td>
<td>(27.7)</td>
</tr>
<tr>
<td>21-25</td>
<td>4</td>
<td>(1.3)</td>
</tr>
<tr>
<td>&gt;25</td>
<td>3</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>11</td>
<td>(3.7)</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>148</td>
<td>(49.4)</td>
</tr>
<tr>
<td>Suburban</td>
<td>72</td>
<td>(24.0)</td>
</tr>
<tr>
<td>Rural</td>
<td>70</td>
<td>(23.3)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>10</td>
<td>(3.3)</td>
</tr>
<tr>
<td><strong>Number of Full Time Teachers</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5</td>
<td>41</td>
<td>(13.6)</td>
</tr>
<tr>
<td>6-10</td>
<td>57</td>
<td>(19.0)</td>
</tr>
<tr>
<td>11-20</td>
<td>68</td>
<td>(22.7)</td>
</tr>
<tr>
<td>21-25</td>
<td>27</td>
<td>(9.0)</td>
</tr>
<tr>
<td>more than 25</td>
<td>89</td>
<td>(29.7)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>18</td>
<td>(6.0)</td>
</tr>
<tr>
<td><strong>Percent of Teachers Certified/Licensed by State</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤50%</td>
<td>45</td>
<td>(15.0)</td>
</tr>
<tr>
<td>&gt;50%</td>
<td>211</td>
<td>(70.3)</td>
</tr>
<tr>
<td>Do not know</td>
<td>44</td>
<td>(14.7)</td>
</tr>
</tbody>
</table>
Table 7: Continued

Characteristics of Charter Schools

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number of Students Enrolled</th>
<th>Percent of Non-white Students Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Students Enrolled</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-100</td>
<td>49</td>
<td>(16.3)</td>
</tr>
<tr>
<td>101-200</td>
<td>63</td>
<td>(21.0)</td>
</tr>
<tr>
<td>201-300</td>
<td>44</td>
<td>(14.7)</td>
</tr>
<tr>
<td>301-500</td>
<td>49</td>
<td>(16.3)</td>
</tr>
<tr>
<td>500+</td>
<td>83</td>
<td>(27.7)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>12</td>
<td>(4.0)</td>
</tr>
<tr>
<td><strong>Percent of Non-white Students Enrolled</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-30%</td>
<td>116</td>
<td>(38.7)</td>
</tr>
<tr>
<td>31-60%</td>
<td>52</td>
<td>(17.3)</td>
</tr>
<tr>
<td>61-90%</td>
<td>54</td>
<td>(18.0)</td>
</tr>
<tr>
<td>91-100%</td>
<td>60</td>
<td>(20.0)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>18</td>
<td>(6.0)</td>
</tr>
</tbody>
</table>

N = 300  
Percentages may not equal 100% due to rounding
schools (41.0%) reported that 100% of their teachers were certified or licensed by the state. In terms of the number of students enrolled, the range spanned from less than 50 students to more than 500 students. A plurality of schools (27.7%) reported having 500 or more students while 16% of schools reported an enrollment of more than 300 students but less than 500.

**Characteristics of Health Education Program**

Approximately two-thirds of the respondents indicated that they had a state requirement to teach health education (60.4%), or a local charter law that required that health education be taught (67.0%) (Table 8). Less health education was taught at the eleventh and twelfth grade levels. The majority of schools taught health education in ninth grade (66.9%). Only 38.5% of the schools taught health education in twelfth grade.

A plurality of schools (38.3%) reported that health education was being taught by licensed/certified teachers in health education. Almost a third of the respondents (32%) reported that health education was being taught by teachers who were licensed/certified in a non-health education subject. At least 53% of the teachers who were teaching health education were not licensed/certified in health education. Approximately 21% of schools reported that the person teaching health education was not a licensed/certified teacher (e.g. school nurse, non-licensed teacher, school leader). When respondents were asked to identify the proportion of health education teachers who were state certified or licensed to teach health education, 34.7% reported that all of their health education teachers had this credential, while 28% reported that none of the teachers teaching health education were state certified or licensed to teach health education.
### Table 8
Characteristics of Health Education Program

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have state health education requirement</td>
<td>203</td>
<td>(67.9)</td>
</tr>
<tr>
<td>Have school district health education requirement</td>
<td>180</td>
<td>(60.4)</td>
</tr>
<tr>
<td>Have charter law health education requirement</td>
<td>199</td>
<td>(66.8)</td>
</tr>
<tr>
<td>Grade Level in which health education is taught*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ninth</td>
<td>200</td>
<td>(66.9)</td>
</tr>
<tr>
<td>Tenth</td>
<td>169</td>
<td>(56.5)</td>
</tr>
<tr>
<td>Eleventh</td>
<td>132</td>
<td>(44.1)</td>
</tr>
<tr>
<td>Twelfth</td>
<td>115</td>
<td>(38.5)</td>
</tr>
<tr>
<td>Not Taught</td>
<td>28</td>
<td>(9.4 )</td>
</tr>
<tr>
<td>Taught once between 9-12</td>
<td>16</td>
<td>(5.3 )</td>
</tr>
<tr>
<td>Taught as Elective</td>
<td>3</td>
<td>(1.0 )</td>
</tr>
<tr>
<td>Who is teaching the majority of health education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Licensed/certified teachers in health education</td>
<td>115</td>
<td>(38.3)</td>
</tr>
<tr>
<td>Licensed/certified teacher in non-health education subject</td>
<td>96</td>
<td>(32.0)</td>
</tr>
<tr>
<td>Non-licensed/non-certified teacher</td>
<td>17</td>
<td>(5.7 )</td>
</tr>
<tr>
<td>Guest speakers from community</td>
<td>14</td>
<td>(4.7 )</td>
</tr>
<tr>
<td>Parents</td>
<td>8</td>
<td>(2.7 )</td>
</tr>
<tr>
<td>School nurse</td>
<td>6</td>
<td>(2.0 )</td>
</tr>
<tr>
<td>School leader</td>
<td>4</td>
<td>(1.3 )</td>
</tr>
<tr>
<td>Other (independent study, web-based)</td>
<td>14</td>
<td>(4.7 )</td>
</tr>
<tr>
<td>Not Reported</td>
<td>26</td>
<td>(8.6 )</td>
</tr>
<tr>
<td>Percent of health education teachers licensed/certified to teach health education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>84</td>
<td>(28.0)</td>
</tr>
<tr>
<td>10%</td>
<td>22</td>
<td>(7.3 )</td>
</tr>
<tr>
<td>20%</td>
<td>6</td>
<td>(2.0 )</td>
</tr>
<tr>
<td>30%</td>
<td>5</td>
<td>(1.7 )</td>
</tr>
<tr>
<td>40%</td>
<td>2</td>
<td>(0.7 )</td>
</tr>
<tr>
<td>50%</td>
<td>5</td>
<td>(1.7 )</td>
</tr>
<tr>
<td>60%</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>70%</td>
<td>3</td>
<td>(1.0 )</td>
</tr>
<tr>
<td>80%</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>90%</td>
<td>7</td>
<td>(2.3 )</td>
</tr>
<tr>
<td>100%</td>
<td>104</td>
<td>(34.7)</td>
</tr>
<tr>
<td>Do not know</td>
<td>35</td>
<td>(11.7)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>27</td>
<td>(9.0 )</td>
</tr>
</tbody>
</table>

* Respondents could select more than one grade.  

N = 300
Stages of Change for Current Practice of Health Education

The vast majority of respondents (81.3%) reported that their charter school was in the maintenance stage for teaching health education (i.e. been teaching health education for more than a year) (Table 9). Only 5 respondents (1.7%) reported that their school was in the relapse stage (i.e. had once taught health education but no longer do so), while 4% reported being in the precontemplation stage (i.e., have not seriously thought about teaching health education). Thirteen percent of all schools were in stages not associated with action (precontemplation, contemplation, preparation, and relapse) and thus were not teaching health education.

A statistically significant difference ($\chi^2=49.15$, df=1, $p<.001$) was found in schools’ Stage of Change by the presence/absence of a local charter law requirement to teach health education at the high school level. Schools in the maintenance stage were more likely to have a local charter law requirement to teach health education in their high school compared to those schools not in the maintenance stage (67% vs. 26%, respectively). A statistically significant difference ($\chi^2=20.75$, df=1, $p<.001$) was also found in schools’ Stage of Change based on the presence/absence of a school district policy requirement to teach health education at the high school level. Schools in the maintenance stage were more likely to have a school district policy requirement to teach health education in their high school when compared to those schools not in the maintenance stage (61% vs. 21%, respectively).

Likewise, a statistically significant difference ($\chi^2=42.96$, df=1, $p<.001$) was found in schools’ Stage of Change by the presence/absence of a state charter law requirement to teach health education at the high school level. Schools in the maintenance stage were
Table 9  
Current Practice of Health Education (Stages of Change)

<table>
<thead>
<tr>
<th>Stages of Change</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not seriously thought about teaching health education (precontemplation)</td>
<td>12</td>
<td>(4.0)</td>
</tr>
<tr>
<td>Have seriously thought about teaching health education but no formal action yet taken (contemplation)</td>
<td>16</td>
<td>(5.3)</td>
</tr>
<tr>
<td>Currently making plans to teach health education within next year (preparation)</td>
<td>7</td>
<td>(2.3)</td>
</tr>
<tr>
<td>Been teaching health education for less than a year (action)</td>
<td>12</td>
<td>(4.0)</td>
</tr>
<tr>
<td>Been teaching health education for more than a year (maintenance)</td>
<td>244</td>
<td>(81.3)</td>
</tr>
<tr>
<td>Have taught health education in the past but no longer do so (relapse)</td>
<td>5</td>
<td>(1.7)</td>
</tr>
<tr>
<td>Not Reported</td>
<td>4</td>
<td>(1.3)</td>
</tr>
</tbody>
</table>

N = 300
more likely to have a state charter law requirement to teach health education in their high school compared to those schools not in the maintenance stage (68% vs. 19%, respectively).

No statistically significant differences were found in schools’ Stage of Change by respondents’ level of education; respondents’ beliefs about health education, and the number of benefits of health education identified by respondents.

**Amount of Time Spent Teaching Health Education Topics**

The most frequently taught health topic taught (10+ hours) was physical activity/fitness, (60.5% of schools) (Table 10). Other frequently taught (10+ hours) health education topics included body systems (45.8%), alcohol and other drug prevention (43.9%), and nutrition/dietary behavior (40.3%). The health topics least likely to be taught were first aid/CPR (21.3%) and health care services (16.3%).

The type of charter school that had the highest mean number of total hours dedicated to teaching all health education topics in grades 9 through 12 were athletic-based schools (128 hours) and Montessori schools (114 hours). Athletic-based schools (M=77.0, SD=19.02) and Montessori schools (M=71.0, SD=1.00) also had the highest mean number of hours dedicated to teaching the HECAT specific health topics: alcohol and other drugs, healthy eating, mental and emotional health, personal health and wellness, physical activity, safety, sexual health, tobacco, and violence prevention.

No statistically significant relationship was found between the mean number of hours invested in teaching health topics and the type of charter school; type of charter sponsor/authorizer; presence/absence of a local charter law; and presence/absence of a state health education policy. There was however, a statistically significant difference
### Table 10
Proportion of Charter Schools Teaching Selected Health Education Topics

<table>
<thead>
<tr>
<th>Health Topic</th>
<th>Not Taught</th>
<th>1-3 hours</th>
<th>4-6 hours</th>
<th>7-9 hours</th>
<th>10 + hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol/other drug use</td>
<td>3.2%</td>
<td>15.4%</td>
<td>23.3%</td>
<td>14.2%</td>
<td>43.9%</td>
</tr>
<tr>
<td>Body Systems</td>
<td>3.2%</td>
<td>14.6%</td>
<td>23.3%</td>
<td>13.0%</td>
<td>45.8%</td>
</tr>
<tr>
<td>Chronic Disease</td>
<td>4.7%</td>
<td>25.4%</td>
<td>27.8%</td>
<td>14.7%</td>
<td>27.4%</td>
</tr>
<tr>
<td>Emotional/mental health</td>
<td>2.4%</td>
<td>17.8%</td>
<td>32.4%</td>
<td>20.5%</td>
<td>26.9%</td>
</tr>
<tr>
<td>Environmental Health</td>
<td>10.0%</td>
<td>29.2%</td>
<td>28.4%</td>
<td>12.8%</td>
<td>19.6%</td>
</tr>
<tr>
<td>First Aid/CPR</td>
<td>21.3%</td>
<td>33.2%</td>
<td>26.9%</td>
<td>5.1%</td>
<td>13.4%</td>
</tr>
<tr>
<td>Health Care Services</td>
<td>16.3%</td>
<td>38.5%</td>
<td>23.0%</td>
<td>9.1%</td>
<td>13.1%</td>
</tr>
<tr>
<td>Human Sexuality</td>
<td>5.5%</td>
<td>13.0%</td>
<td>22.5%</td>
<td>23.7%</td>
<td>35.2%</td>
</tr>
<tr>
<td>Infectious Disease</td>
<td>7.5%</td>
<td>28.5%</td>
<td>31.2%</td>
<td>15.4%</td>
<td>17.4%</td>
</tr>
<tr>
<td>Injury Prevention &amp; Safety</td>
<td>7.9%</td>
<td>33.1%</td>
<td>31.5%</td>
<td>10.6%</td>
<td>16.9%</td>
</tr>
<tr>
<td>Nutrition &amp; Dietary Behavior</td>
<td>3.2%</td>
<td>11.8%</td>
<td>27.3%</td>
<td>17.4%</td>
<td>40.3%</td>
</tr>
<tr>
<td>Physical Activity &amp; Fitness</td>
<td>2.4%</td>
<td>8.7%</td>
<td>17.4%</td>
<td>11.1%</td>
<td>60.5%</td>
</tr>
<tr>
<td>Tobacco-Use Prevention</td>
<td>3.2%</td>
<td>24.1%</td>
<td>27.3%</td>
<td>12.2%</td>
<td>33.2%</td>
</tr>
<tr>
<td>Violence Prevention</td>
<td>4.7%</td>
<td>22.0%</td>
<td>27.2%</td>
<td>17.3%</td>
<td>28.7%</td>
</tr>
</tbody>
</table>

N = 250 to 254
(t (209)=1.99, p=0.047) in the number of hours invested in teaching health topics by the presence/absence of a district health education policy. Charter schools with a district health education policy had a higher mean number of hours invested in teaching health topics (M=89.25, SD=35.18) compared with those that did not have a district health education policy (M=77.41, SD=37.08).

There was a statistically significant difference (F (4,246=2.963, p=0.02) by rank of the state charter law and how much time was invested in teaching the selected health topics. The four key factors that determine rank of a charter law include number of schools and applications, multiple charter authorizers, waivers and legal autonomy, and full funding and fiscal autonomy (CER, 2010c). The mean number of hours invested in teaching selected health topics in grades 9 through 12 for schools with charter laws ranked C (M=99.26, SD=32.27) was statistically significantly (p=0.013) greater than schools in states with charter laws ranked B (M=81.89, SD=33.04) and was statistically significantly (p=0.033) greater than schools in states with charter laws ranked A (M=79.0, SD=35.89).

There was a weak, positive statistically significant association (r (250)=0.16, p=0.01) between the mean number hours teaching all health education topics and the number of perceived benefits to teaching health education at the high school level as reported by the respondents. The higher the number of perceived benefits reported, the higher the mean number of hours of health education taught. No statistically significant differences were found in the mean number of health education hours taught between those respondents who believed that teaching health education will improve overall academic achievement and those respondents who did not believe this.
Statistical tests were performed to determine if the number of hours invested in teaching the specific HECAT aligned health topics differed across selected variables (e.g. type of charter school, type of charter sponsor/authorizer, ranking of state charter law, presence/absence of a health education policy at the local charter school level, district policy and state policy, number of benefits of health education and perceived affect on academic performance). Only one statistically significant difference was found. The mean number of hours invested in teaching the specific HECAT aligned health topics differed by rank of state charter law (F (4,244) =3.66, p=0.006). Schools with a state charter law rank of “C” invested more time in teaching selected health topics aligned with the HECAT (M=63.44, SD=18.05, N=52) (p=0.003) than charter schools in states with a rank of “A” (M=49.97, SD=21.19, N=69) (p=0.028) and charter schools in states with a rank of “B” (M=53.09, SD=18.08, N=92).

**Health Skills Taught as Recommended by National Health Education Standards**

Seven of the eight health skills specified in the National Health Education Standards were being taught by over 50% of the charter schools surveyed. There was a statistically significant difference (F (8,274)=2.09, p=0.037) in the number of health skills taught and type of charter school. Montessori schools had the greatest mean number of health skills taught (M=7.0, SD=0.00) while Core Knowledge and vocational schools had the lowest mean number of health skills taught (M=4.0, SD=2.21). The most frequently taught health skill was *practice health enhancing behaviors and reducing health risks* (86.1%) followed by *use decision making skills to enhance health* (80.1%). Ten schools (3.5%) were not teaching any of the health skills while 13 schools (4.5%) had respondents that did not know if any health skills were being taught (Table 11).
Table 11

Proportion of Charter Schools Teaching National Health and Education Standards

<table>
<thead>
<tr>
<th>Health Skill</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice health-enhancing behaviors &amp; reducing health risks</td>
<td>247</td>
<td>(86.1)</td>
</tr>
<tr>
<td>Use decision making skills to enhance health</td>
<td>230</td>
<td>(80.1)</td>
</tr>
<tr>
<td>Analyze influence of culture, media, technology &amp; other factors on health</td>
<td>202</td>
<td>(70.4)</td>
</tr>
<tr>
<td>Use goal setting skills to enhance health</td>
<td>201</td>
<td>(70.0)</td>
</tr>
<tr>
<td>Use interpersonal communication skills to enhance skills</td>
<td>199</td>
<td>(69.3)</td>
</tr>
<tr>
<td>Access valid health information &amp; health promoting products &amp; services</td>
<td>193</td>
<td>(67.2)</td>
</tr>
<tr>
<td>Advocate for personal, family, &amp; community health</td>
<td>180</td>
<td>(62.7)</td>
</tr>
<tr>
<td>I don’t know</td>
<td>13</td>
<td>(4.5)</td>
</tr>
<tr>
<td>No health skills taught</td>
<td>10</td>
<td>(3.5)</td>
</tr>
</tbody>
</table>

N = 277
A statistically significant difference \((F(4,277)=2.44, \ p=0.047)\) was noted when comparing the number of seven essential health skills taught by the rank of the state charter laws (rank A-F). The mean number of skills taught for charter schools in states with a charter law state rank of C \(\text{(M}=5.57, \ SD=2.11; \ N=57)\) was statistically significantly higher \(p=0.046\) than those schools in states with a charter law state rank of A \(\text{(M}=4.45, \ SD=2.42; \ N=77)\).

A statistically significant difference was noted in the number of seven essential skills taught by the presence/absence of a health education policy within the charter law, at the high school level \(t(262)=6.35, p<0.001\). Charter schools with a health education policy within their charter law were more likely to have a higher number of skills taught \(\text{(M}=5.6, \ SD=1.94)\) than charter schools whose charter law did not have a defined health education policy \(\text{(M}=3.60, \ SD=2.74)\).

Likewise, the presence of a district level or state level health education policy also significantly influenced how many of the recommended essential health skills were taught. Charter schools with a district health education policy \(t(233)=4.84 \ p<0.001\) were significantly more likely to have a higher number of skills taught \(\text{(M}=5.6, \ SD=2.06)\) than charter schools without a district health education policy \(\text{(M}=3.9, \ SD=2.70)\). Likewise, charter schools with a state health education policy \(t(247)=6.19 \ p<0.001\) were significantly more likely to have a higher number of skills taught \(\text{(M}=5.6, \ SD=1.98)\) compared with those schools without a state health education policy \(\text{(M}=3.5, \ SD=2.68)\).

There was also a weak, positive statistically significant association \(r(281)=0.33, \ p<0.001\) between the number of health education skills taught and the number of perceived benefits reported by the respondents to teaching health education at the high
school level. The higher the number of perceived benefits reported, the higher the number of skills taught.

There was also a statistically significant difference ($t(9)=2.89$, $p=0.05$) in the number of health skills taught by respondents’ belief about health education. Schools where the respondent believed health education improved academic performance taught a greater number of health skills ($M=5.3$, $SD=2.20$) compared with respondents that did not believe health education improved academic performance ($M=3.4$, $SD = 2.44$).

**Barriers and Benefits to Teaching Health Education**

Table 12 presents respondents’ perceived benefits and perceived barriers to teaching health education. Thirty four percent of the respondents indicated that they perceived no barriers to teaching health education in their charter school. One in four indicated that their school was teaching an adequate amount of health education. Of those respondents that selected barriers, the most frequently selected barrier was lack of financial resources (26.7%), followed by lack of time (25.7%) and need to focus on core subjects (25.3%).

A weak, negative statistically significant association ($r(210)=-0.15$, $p=.03$) was detected between the number of barriers to teaching health education and the number of years respondents had been teaching. The higher the number of years of teaching, the lower the number of perceived barriers. No statistically significant difference was reported for the number of barriers reported and type of charter school or respondents’ administration experience.

When respondents were asked to select from a list of benefits to teaching health education in high schools the most frequently selected benefit (95.6%) was “students learn
Table 12

Perceived Barriers and Benefits to Teaching Health Education

<table>
<thead>
<tr>
<th>Barriers</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no barriers to teaching health education</td>
<td>102</td>
<td>(34.0)</td>
</tr>
<tr>
<td>Lack of financial resources</td>
<td>80</td>
<td>(26.7)</td>
</tr>
<tr>
<td>Lack of time</td>
<td>77</td>
<td>(25.7)</td>
</tr>
<tr>
<td>Need to focus on core subjects</td>
<td>76</td>
<td>(25.3)</td>
</tr>
<tr>
<td>Lack of qualified teachers</td>
<td>27</td>
<td>(9.0)</td>
</tr>
<tr>
<td>Other (taught in other courses, lack of space)</td>
<td>22</td>
<td>(7.3)</td>
</tr>
<tr>
<td>Health education is not required by charter law</td>
<td>16</td>
<td>(5.3)</td>
</tr>
<tr>
<td>Lack of administrative support</td>
<td>14</td>
<td>(4.7)</td>
</tr>
<tr>
<td>Students not interested in health topics</td>
<td>7</td>
<td>(2.3)</td>
</tr>
<tr>
<td>Parents not interested in health topics</td>
<td>7</td>
<td>(2.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benefits</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students learn how to avoid risk behaviors</td>
<td>281</td>
<td>(95.6)</td>
</tr>
<tr>
<td>Students learn how to prevent disease &amp; disorders</td>
<td>266</td>
<td>(90.5)</td>
</tr>
<tr>
<td>Health status of students will improve</td>
<td>249</td>
<td>(84.7)</td>
</tr>
<tr>
<td>Health status of family members will improve</td>
<td>180</td>
<td>(61.2)</td>
</tr>
<tr>
<td>Improved overall academic performance of students</td>
<td>148</td>
<td>(50.3)</td>
</tr>
<tr>
<td>Improved conduct of students in classroom</td>
<td>140</td>
<td>(47.6)</td>
</tr>
<tr>
<td>Other (enhance quality of life, better decision makers)</td>
<td>17</td>
<td>(5.8)</td>
</tr>
<tr>
<td>No benefits</td>
<td>5</td>
<td>(1.7)</td>
</tr>
</tbody>
</table>

N = 300
how to avoid risk behaviors.” The only benefit on the list that was not selected by over 50% of respondents was “improved conduct in the classroom” (47.6%). Five respondents (1.7%) reported that “there are no benefits to offering health education classes in high school.” Slightly more than half of respondents identified four or more benefits to offering health education in the classroom. No statistically significant difference was found between the number of benefits and type of charter school, years of teaching experience, or years of administration experience.

**Testing the Hypotheses**

This section presents the statistical results for the hypotheses as stated in Chapter One. Analyses were performed to determine acceptance or rejection of the hypotheses. After each hypotheses a description of specific statistics used along with corresponding results are presented.

**Research Question 1**

In what stage are charter schools for teaching health education at the high school level to their students?

**Hypothesis 1.0:** The majority of charter schools will be in the precontemplation and contemplation stages regarding teaching health education to their high school students.

Eighty-two percent of respondents were in Maintenance stage. The hypothesis was rejected.

**Hypothesis 1.1:** There will be no statistically significant difference in a charter school’s stage by the presence/absence of a local charter law requirement to teach health education at the high school level.
A Pearson chi-square test was conducted to determine if there was a difference in charter school’s stage by the presence/absence of a local charter law requirement to teach health education at the high school level. The analysis found a statistically significant difference in charter school’s stage by the presence/absence of a local charter law to teach health education at the high school level ($\chi^2 = 49.15$, df=1, $p<.001$). Those in the maintenance stage (67%) were more likely to have a local charter policy to teach health education in their high school compared with those who were not in the maintenance stage (26%). The null hypothesis was rejected.

**Hypothesis 1.2:** There will be no statistically significant difference in a charter school’s stage by the presence/absence of a school district requirement to teach health education at the high school level.

A Pearson chi-square test was conducted to determine if there was a difference in charter school’s stage by the presence/absence of a school district requirement to teach health education at the high school level. The analysis found a statistically significant difference in charter school’s stage by the presence/absence of a school district policy to teach health education at the high school level ($\chi^2 = 20.75$, df=1, $p<.001$). Those in the maintenance stage (61%) were more likely to have a school district policy to teach health education in their high school compared with those who were not in the maintenance stage (21%). The null hypothesis was rejected.
Hypothesis 1.3: There will be no statistically significant difference in a charter school’s stage by the presence/absence of a state requirement to teach health education at the high school level.

A Pearson chi-square test was conducted to determine if there was a difference in charter school’s stage by the presence/absence of a state requirement to teach health education at the high school level. The analysis found a statistically significant difference in charter school’s stage by the presence/absence of a state charter law to teach health education at the high school level ($\chi^2 = 42.96$, df=1, $p < 0.001$). Those in the maintenance stage (68%) were more likely to have a state policy to teach health education in their high school compared with those who were not in the maintenance stage (19%). The null hypothesis was rejected.

Hypothesis 1.4: There will be no statistically significant difference in a charter school’s stage by the respondent’s level of education.

A Pearson chi-square test was conducted to determine if there was a difference in charter school’s stage by the respondent’s level of education. The analysis found no statistically significant difference in charter school’s stage by the respondent’s level of education (i.e., undergraduate vs. graduate degree) ($\chi^2 = 2.18$, df=1, $p = 0.14$). The null hypothesis was accepted.

Hypothesis 1.5: There will be no statistically significant difference in a charter school's stage between schools whose respondents believe that providing health education to high school students does not help to improve their overall academic performance and schools whose respondents believe
that providing health education to high school students improves overall academic performance.

A Pearson chi-square test was conducted to determine if there was a difference in charter school’s stage between schools whose respondents believe that providing health education to high school students would improve their overall academic achievement and those schools whose respondents did not believe that. The analysis found no statistically significant difference in charter school’s stage between schools whose respondents believed that providing health education to high school students would improve their overall academic achievement and those schools whose respondents did not believe that. ($\chi^2 = 1.03$, df=1, $p=0.38$). Thus, the null hypothesis was accepted.

**Hypothesis 1.6: There will be no statistically significant association between a charter school’s stage and the number of perceived benefits of teaching health education at the high school level.**

A Pearson chi-square test was conducted to determine if there was a relationship between a charter school’s stage and the number of perceived benefits to teaching health education at the high school level. The analysis found no statistically significant relationship ($\chi^2 = 2.83$, df=6, $p=0.83$). Thus, the null hypothesis was accepted.

**Research Question 2**

How much time (number of hours) do charter schools invest in teaching the selected health topics at the high school level?
Hypothesis 2.0: There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics by type of charter school.

A one way ANOVA was completed to determine if the mean number of hours invested in teaching selected health topics was different based on the type of charter school. Although the mean number of hours teaching selected health topics were higher for athletic-based (M=128.0, SD=34.06), Montessori (M=114.0, SD=8.02) and virtual/cyber based (M=91.0, SD=32.23) compared with vocational (M=81.0, SD=40.17) and special needs (M=79.0, SD=21.97), the analysis revealed there was no statistically significant difference (F (8,243) =1.501, p=0.157). Thus, the null hypothesis was accepted.

Hypothesis 2.1: There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics by type of charter sponsor/authorizer.

A one way ANOVA was completed to determine if the mean number of hours invested in teaching selected health topics is different based on the type of charter sponsor/authorizer. Although the mean number of hours teaching selected health topics was higher for city official (M=114.0, SD=34.06), commercial entity (M=96.37, SD=36.87) compared with state board of education (M=88.87, SD=37.52) and university or college (M=77.0, SD=39.46), the analysis revealed there was no statistically significant difference (F (5,240) =0.02, p=0.54). Thus, the null hypothesis was accepted.
Hypothesis 2.2: There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics by rank of the state charter law (grades A-F).

A one way ANOVA was completed to determine if the mean number of hours invested in teaching selected health topics is different by rank of the state charter law (grades A-F). The analysis indicated that there was a statistically significant difference by rank of the state charter law (F (4,246) =2.96, p=0.02). Post hoc comparisons using the Tukey HSD test revealed that the mean numbers of hours invested in teaching selected health topics for charter schools in states with a charter law with a rank of C (M=99.26, SD=32.27) was statistically significantly different (p=0.013) from rank A (M=79.0, SD=35.89) and statistically significantly different (p=0.033) from rank B (M=81.89, SD=33.04). The other differences between groups were not statistically significant. Thus, the null hypothesis was rejected.

Hypothesis 2.3: There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics by the presence/absence of a health education policy within the charter law at the high school level.

A t-test was conducted to determine if the mean number of hours teaching selected health topics differed by the presence/absence of a health education policy at the high school level. The analysis indicated that there was no statistically significant difference in the mean number of hours invested in
teaching selected health topics between those who have a health education policy at the high school and those who do not have a health education policy (t (233)=1.639, p=0.102). Thus, the null hypothesis was accepted.

**Hypothesis 2.4:** There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics by the presence/absence of a health education district policy at the high school level.

A t-test was conducted to determine if the mean number of hours teaching health selected topics differed by the presence/absence of a health education district policy at the high school level. The analysis indicated that there was a statistically significant difference between those who have a district health education policy and those who did not (t (209)=1.99 p=0.047). Those with a district health education policy had a higher mean number of hours invested in teaching health topics (M=89.25, SD=35.18) compared with those that did not have a district health education policy (M=77.41, SD=37.08). Thus, the null hypothesis was rejected.

**Hypothesis 2.5:** There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics by the presence/absence of a health education state policy at the high school level.

A t-test was conducted to determine if the mean number of hours teaching selected health topics differed by the presence/absence of a health education state policy at the high school level. The analysis indicated that there was no statistically significant difference between those who had a state health education policy.
policy at the high school and those who had not (t (222)=1.19, p=0.233). Thus, the null hypothesis was accepted.

**Hypothesis 2.6: There will be no statistically significant association between the mean number of hours invested in teaching selected health topics and the number of benefits reported by the respondents to teaching health education at the high school level.**

A Pearson correlation coefficient was conducted to determine if there was an association between the mean number of hours invested in teaching selected health topics and the number of benefits reported by the respondents to teaching health education at the high school level. The analysis indicated that there was a small, positive statistically significant association between the mean number of hours teaching health education (M=84.96, SD=35.12) and the number of benefits (M=4.40, SD=1.49) reported by the respondents to teaching health education at the high school level (r (250)=0.16, p=0.01). The higher the number of teaching hours, the higher the number of benefits reported. Thus, the null hypothesis was rejected.

**Hypothesis 2.7: There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics between charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.**
A t-test analysis was conducted to determine if there was a difference in the mean number of hours teaching selected health topics between schools whose respondents believed that providing health education to high school students would improve their overall academic achievement and those schools whose respondents did not believe that. The analysis found no statistically significant difference in the mean number of hours teaching selected health topics between schools whose respondents believed that providing health education to high school students would improve their overall academic achievement and those schools whose respondents did not believe that (t (213)=0.28, p=0.779). Thus, the null hypothesis was accepted.

**Hypothesis 2.8:** There will be no statistically significant difference in the mean number of hours invested in teaching selected health topics by the geographical location of the school (urban, rural, suburban).

A one way ANOVA was completed to determine if the mean number of hours invested in teaching selected health topics differed by the geographical location of the school. The analysis revealed that there were no statistically significant differences in the mean number of hours invested in teaching selected health topics based on geographical location (F (2,243) =1.67, p=0.19). Thus, the null hypothesis was accepted.

**Research Question 3**

How much time (number of hours) do charter schools invest in teaching health education topics that are aligned with the HECAT at the high school level?
Hypothesis 3.0: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by type of charter school.

A one way ANOVA was completed to determine if the total number of hours invested in teaching selected health topics that are aligned with the HECAT differed by the type of charter school. Although the mean number of hours teaching selected health topics (HECAT) were higher for athletic-based (M=77.0, SD=19.03), Montessori (M=71.0, SD=1.00), and virtual/cyber based (M=58.0, SD=18.96) compared with vocational (M=52, SD=18.06) and core knowledge (M=51, SD=19.03), the analysis revealed they were not statistically significantly different (F (8,241)=1.24, p=0.22). Thus, the null hypothesis was accepted.

Hypothesis 3.1: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by type of charter sponsor/authorizer.

A one way ANOVA was completed to determine if the total numbers of hours invested in teaching selected health topics that are aligned with the HECAT differed by the type of charter sponsor/authorizer. Although the mean number of hours teaching selected health topics (HECAT) were higher for city official (M=72.0, SD=22.63), commercial entity (M=60.0, SD=17.88), and state board of education (M=57.0, SD=22.83) compared with LEA/school board (M=54.0, SD=20.59), and university or college (M=51.0, SD=20.02), the analysis revealed they were not statistically significantly different (F (5,238)=0.70, p=0.628). Thus, the null hypothesis was accepted.
Hypothesis 3.2: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by rank of the state charter law (rank A-F).

A one way ANOVA was completed to determine if the total numbers of hours invested in teaching selected health topics aligned with the HECAT differed by rank of the state charter law (grades A-F). The analysis indicated that there was a statistically significant difference in the numbers of teaching hours aligned with the HECAT by rank of the state charter law (F (4,244) =3.66, p=0.006). Post hoc comparisons using the Tukey HSD test revealed that the mean score of the total numbers of hours invested in teaching selected health topics aligned with the HECAT for rank C (M=63.44, SD=18.06; N=52) was statistically significantly greater (p=0.003) than rank A (M=49.97, SD=21.19; N=69) and statistically significantly greater (p=0.028) than rank B (M=53.09, SD=18.08; N=92). Thus, the null hypothesis was rejected.

Hypothesis 3.3: There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT and the presence/absence of a health education policy within the charter law at the high school level.

A t-test was conducted to determine if the number of hours teaching health selected topics (HECAT) differed by the presence/absence of a health education policy at the high school level. The analysis indicated that there was no statistically significant difference between those who had a health education policy in the charter law and those who did not for the number of hours teaching
selected health topics (HECAT) \((t(231)=1.84, p=0.067)\). Thus, the null hypothesis was accepted.

**Hypothesis 3.4:** There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT and the presence/absence of a health education district policy at the high school level.

A t-test was conducted to determine if the number of hours teaching selected health topics (HECAT) differed by the presence/absence of a health education district policy at the high school level. The analysis indicated that there was no statistically significant difference in the number of hours teaching selected health topics (HECAT) between those who had a district health education policy and those who did not \((t(208)=1.48, p=0.149)\). Thus, the null hypothesis was accepted.

**Hypothesis 3.5:** There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT taught and the presence/absence of a health education state policy at the high school level.

A t-test was conducted to determine if the number of hours teaching selected health topics (HECAT) differed by the presence/absence of a health education state policy at the high school level. The analysis indicated that for the number of hours teaching selected health topics (HECAT) there was no statistically significant difference between those who had a state health education policy and
those who did not (t (221)=1.44, p=0.152). Thus, the null hypothesis was accepted.

**Hypothesis 3.6:** There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by the number of perceived benefits of teaching health education at the high school level.

A one way ANOVA was completed to determine if the total numbers of hours invested in teaching selected health topics (HECAT) differed by the number of benefits reported. Although the mean number of hours teaching selected health topics (HECAT) increased proportionally with the number of perceived benefits of teaching health education, the analysis revealed there was no statistically significant difference based on the number of benefits (F (6,241) =1.80, p=0.10). Thus, the null hypothesis was accepted.

**Hypothesis 3.7:** There will be no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT between charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.

A t-test analysis was conducted to determine if there was a difference in the number of hours teaching selected health topics (HECAT) between schools whose respondents believed that providing health education to high school students would improve their overall academic achievement and those schools whose
respondents did not believe that. The analysis found no statistically significant difference in the number of hours teaching selected health topics (HECAT) between schools whose respondents believed that providing health education to high school students would improve their overall academic achievement and those schools whose respondents did not believe that (t (211)=0.64, p=0.524). Thus, the null hypothesis was accepted.

**Research Question 4**

What are the characteristics of charter high schools that spend the greatest amount of time and least amount of time (i.e., hours) teaching all health topics?

**Hypothesis 4.0:** None of the following factors will be more predictive than any other in determining the number of hours spent teaching selected health education topics:

- a) Number of full time teachers employed
- b) Enrollment size
- c) Ranking of charter law
- d) Presence/absence of requirement to teach health education
- e) Those schools with > than 50% of certified/licensed health educators

Using the Enter method, a significant model emerged (F (5,211) =2.74, p=0.02) with only one of the five predictors statistically significant: percent of schools with certified/licensed teachers (p=0.009). However, this variable lacked practical significance: only 3% of the variance was predicted by this variable (adjusted $R^2$ value was 0.027, beta=0.153). Thus, the null hypothesis was rejected.

**Research Question 5**

How many of the seven essential health skills, as described by the National Health Education Standards are being taught by charter schools at the high school level?
Hypothesis 5.0: There will be no statistically significant difference in the number of seven essential health skills taught by type of charter school.

A one way ANOVA was calculated to determine if the number of essential health skills differed by the type of charter schools. The analysis revealed a statistically significant difference in the number of essential health skills by the type of charter school (F (8, 274) =2.09, p=0.037). Post hoc comparisons using the Tukey HSD test showed the mean number of essential health skills was higher for Montessori (M=7.0, SD=0.0), athletic-based (M=6.0, SD=0.89), virtual/cyber based (M=6.0, SD=1.50), art based (M=6.0, SD=1.53) compared with special needs (M=5, SD=2.48), core knowledge (M=4.0, SD=2.08), and vocational (M=4.0, SD=2.33). Thus, the null hypothesis was rejected.

Hypothesis 5.1: There will be no statistically significant difference in the number of seven essential health skills taught by type of charter sponsor/authorizer.

A one way ANOVA was completed to determine if the number of essential health skills taught differed by the type of charter sponsor/authorizer. Although the mean number of essential health skills taught was higher for city official (M=7.0, SD=0.00), commercial entity (M=6.0, SD=1.36), university or college (M=5.0, SD=1.91), and state board of education (M=5.0, SD=2.18) compared with LEA/school board (M=4.0, SD=2.22) the analysis revealed they were not statistically significant (F (5,270) =1.20, p=0.31). Thus, the null hypothesis was accepted.
Hypothesis 5.2: There will be no statistically significant difference in the number of seven essential health skills taught by rank of the state charter law.

A one way ANOVA was completed to determine if the number of essential health skills taught differed by rank of the state charter law (grades A-F). The analysis indicated that there was a statistically significant difference by rank of the state charter law (F (4,277)=2.44, p=0.047) in the number of essential health skills taught. Post hoc comparisons using the Tukey HSD test revealed that the mean number of essential health skills for rank C (M=5.57, SD=2.11; N=57) was statistically significantly different (p=0.046) from rank A (M=4.45, SD=2.42; N=77). The other differences between groups were not statistically significant. Thus, the null hypothesis was rejected.

Hypothesis 5.3: There will be no statistically significant difference in the number of seven essential health skills taught and the presence/absence of a health education policy within the charter law at the high school level.

A t-test was conducted to determine if the number of essential health skills taught differed by the presence/absence of a health education policy at the high school level. The analysis indicated that there was a statistically significant difference between those who had a charter law health education policy at the high school and those who did not for the number of essential health skills taught (t (262)=6.35, p<0.001). Those who had a charter law health education policy were more likely to have a higher number of essential health skills taught (M=...
5.6, SD=1.94) compared with those who did not have a charter law health education policy (M=3.6, SD=2.74). Thus, the null hypothesis was rejected.

**Hypothesis 5.4:** There will be no statistically significant difference in the number of seven essential health skills taught and the presence/absence of a health education district policy at the high school level.

A t-test was conducted to determine if the number of essential health skills taught differed by the presence/absence of a health education district policy at the high school level. The analysis indicated that there was a statistically significant difference in the number of essential health skills taught (t (233)=4.84, p<0.001) between those who had a district health education policy at the high school and those who did not. Those who had a district health education policy at the high school level were more likely to have a higher number of essential health skills taught (M=5.6, SD=2.06) compared with those who did not have a district health education policy (M=3.9, SD=2.70). Thus, the null hypothesis was rejected.

**Hypothesis 5.5:** There will be no statistically significant difference in the number of seven essential health skills taught and the presence/absence of a health education state policy at the high school level.

A t-test was conducted to determine if the number of essential health skills taught differed by the presence/absence of a health education state policy at the high school level. The analysis indicated that there was a statistically significant difference in the number of essential health skills taught between those who had a health education state policy at the high school and those who did not (t (247)=6.19, p<0.001). Those who had a health education state policy at the high
school level were more likely to have a higher number of essential health skills taught (M= 5.6, SD=1.98) compared with those who did not have a state health education policy (M=3.5, SD=2.68). Thus, the null hypothesis was rejected.

**Hypothesis 5.6:** There will be no statistically significant association between the number of seven essential health skills taught and the number of perceived benefits of teaching health education at the high school level reported by the respondents.

A Pearson correlation coefficient was completed to determine if there was an association between the number of essential health skills taught and the number of perceived benefits of teaching health education at the high school level. The analysis indicated that there was a small to medium positive statistically significant association (r (281)=0.33, p<0.001) between the number of essential health skills taught and the number of perceived benefits. The higher the number of essential health skills taught, the higher the number of benefits reported. Thus, the null hypothesis was rejected.

**Hypothesis 5.7:** There will be no statistically significant difference in the number of seven essential health skills taught between charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.

A t-test analysis was conducted to determine if there was a difference in the number of essential health skills taught between schools whose respondents believed that providing health education to high school students would improve
their overall academic achievement and those schools whose respondents did not believe that. The analysis found a statistically significant difference in the number of essential health skills taught between schools whose respondents believed that providing health education to high school students would improve their overall academic achievement and those schools whose respondents did not believe that (t (9)=2.888, p=0.05). Those respondents who believed health education can improve students overall academic performance had a higher number of essential health skills taught (M=5.3 SD=2.20; N=287) compared with those who did not believe that academic performance would be improved (M=3.4, SD=2.44; N=9). Thus, the null hypothesis was rejected.

Research Question 6

Do charter school respondents believe that there are benefits to teaching health education in the high school classroom?

Hypothesis 6.0: In high school, the majority of respondents will identify multiple benefits (more than three) to offering health education in the classroom.

Slightly more than half of respondents identified at least four benefits to offering health education in the classroom (M=4.45, SD=0.09, median=5). Thus the hypothesis was accepted.

Hypothesis 6.1: There will be no statistically significant difference in the number of perceived benefits to teaching health education identified by type of charter school.
A one way ANOVA was completed to determine if the number of perceived benefits differed by the type of charter school. Although the mean number of benefits were higher for athletic-based (M=5.5, SD=1.29), Montessori (M=5, SD=1.73) and virtual/cyber based (M=4.8, SD=1.34) compared to the other types of schools (M=4.0) the analysis revealed they were not statistically significantly different (F (8,279)=0.69, p=0.70). Thus, the null hypothesis was accepted.

**Hypothesis 6.2: There will be no statistically significant association between the number of identified perceived benefits to teaching health education and the number of years of experience the respondent has in teaching.**

A Pearson correlation coefficient was conducted to determine if there was an association between the number of years of experience the respondents had in teaching and the number of perceived benefits to teaching health education at the high school level. The analysis indicated that there was no statistically significant association (r (279)=−0.09, p=.146) between the number of perceived benefits and the number of years of teaching. Thus, the null hypothesis was accepted.

**Hypothesis 6.3: There will be no statistically significant association between the number of identified perceived benefits to teaching health education and the number of years of experience the respondent has in administration.**

A Pearson correlation coefficient was conducted to determine if there was an association between the number of years of experience the respondents had in administration and the number of perceived benefits to teaching health education at the high school level. The analysis indicated that there was no statistically significant association (r (161) =−0.05, p=.511) between the number of perceived
benefits and the number of years of administration. Thus, the null hypothesis was accepted.

**Research Question 7**

Do charter school respondents believe that barriers exist which prevent their school from offering more health education in the high school classroom?

**Hypothesis 7.0:** In high school, the majority of charter school respondents will identify multiple barriers (more than two) that prevent their school from offering more health education in the classroom.

The vast majority (91%) reported at least three barriers. Thus, the hypothesis was accepted.

**Hypothesis 7.1:** There will be no statistically significant difference in the number of identified barriers to teaching health education by type of charter school.

A one way ANOVA was completed to determine if the number of barriers identified differed by the type of charter school. Although vocational and “other” reported a mean of 2 barriers compared with the other charter schools that averaged one barrier, the analysis revealed there were no statistically significant differences in the number of perceived barriers by type of charter school (F (8,209)=1.43, p=0.186). Thus, the null hypothesis was accepted.

**Hypothesis 7.2:** There will be no statistically significant association between the number of identified barriers to teaching health education and the number of years of experience the respondent has in teaching.
A Pearson correlation coefficient was conducted to determine if there was an association between the number of years of experience the respondents had in teaching and the number of perceived barriers identified to teaching health education at the high school level. The analysis indicated that there was a negative, weak statistically significant association \((r(210)=-0.15, p=0.030)\) between the number of perceived barriers and the number of years of teaching. The more years of experience teaching, the less the number of perceived barriers. Thus, the null hypothesis was rejected.

**Hypothesis 7.3: There will be no statistically significant association between the number of identified barriers to teaching health education and the number of years of experience the respondent has in administration.**

A Pearson correlation coefficient was conducted to determine if there was an association between the number of years of experience the respondents had in administration and the number of perceived barriers reported to teaching health education at the high school level. The analysis indicated that there was no statistically significant association \((r(115)=-0.13, p=0.165)\) between the number of perceived barriers reported and the number of years of administration. Thus, the null hypothesis was accepted.

**Summary**

The results of this study found that 81.3% of the charter schools surveyed were in the maintenance stage of teaching health education and that 40.1% of the schools surveyed identified themselves as “core knowledge.” Charter schools are exempt from the same licensure/certification requirements of traditional public schools and therefore,
it is important to note the licensure/certification requirements of the charter schools surveyed. In this study, 70% of the schools reported having more than 50% of their teachers licensed/certified by the state. Slightly more than one third of these schools (34.7%) reported that the teachers who taught health education were licensed/certified to teach health education.

Overall, a total of 86% of the schools reported having a state, district or charter policy to teach health education. When broken down by each policy level, approximately 60% of the schools surveyed reported a state, district, or charter law requirement to teach health education. Schools with a local, district, or state charter law were more likely to be in the maintenance stage of teaching health education, indicating that the presence of a policy does impact the amount of health education being taught in charter schools. A plurality of schools (37%) were in a state with a charter law rank of B followed by rank of A (27%), C (19%), D (15%), and F (2%). A Pearson chi-square test was conducted to see if state rank of charter law influenced likelihood of a health education policy. The analysis indicated that rank of state charter law did not statistically influence presence of a policy ($\chi^2 = 2.99, p=.56$). However, schools in states with a charter law rank of C were more likely to teach health education than schools in states with a rank of A, B, D, or F.

Similar to traditional public schools the amount of time spent teaching health education topics decreased as high school grade level increased. That is, ninth graders were more likely to receive health education than twelfth graders. The health topic that was taught the most was physical activity and fitness while first aid and health care services were taught the least.

Perceived barriers and perceived benefits influenced the amount of health
education taught. This study did not find any significant impact on quality or quantity of health education being taught based on the number of perceived barriers or perceived benefits to teaching health education.
Chapter 5

Conclusions & Discussion

This chapter contains the following sections relative to the findings from this study: 1) Summary, 2) Accepted Hypotheses, 3) Rejected Hypotheses, 4) Discussion, 5) Implications, 6) and Recommendations.

Summary

The following questions served as the framework for this study:

1. In what stage are charter schools for teaching health education at the high school level to their students?
2. How much time (number of hours) do charter schools invest in teaching selected health topics at the high school level?
3. How much time (number of hours) do charter schools invest in teaching health education topics that are aligned with the HECAT topics at the high school level?
4. What are the characteristics of charter high schools that spend the greatest amount of time and least amount of time (i.e., hours) teaching all health topics?
5. How many of the seven essential health skills, as described by the National Health Education Standards, are being taught by charter schools at the high school level?
6. Do charter school respondents believe that there are benefits to teaching health education in the high school classroom?
7. Do charter school respondents believe that there are barriers which prevent their school from offering more health education in the high school classroom?
A four-page, 28 item survey instrument was developed to assess the amount of health education being taught at charter schools in the United States. Surveys were mailed to 750 randomly selected charter schools selected from the National Charter School Directory. The final response rate was 44% with representation from 37 states.

Descriptive statistics (e.g., means, standard deviations, percentages) were used to describe findings of the individual items. Additional statistical tests included chi-square statistics, t-tests, Pearson product moment correlation coefficients, and multivariate regression.

On the subsequent pages, Tables 13 and 14 present the accepted and rejected hypotheses along with the statistical tests that were used to test each hypothesis. A total of 23 hypotheses were accepted and 18 hypotheses were rejected.
Table 13

<table>
<thead>
<tr>
<th>Accepted Hypotheses</th>
<th>Hypotheses</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 1.4.</strong></td>
<td>The charter school’s stage does not differ significantly based on the respondents’ level of education.</td>
<td>Pearson Chi-square</td>
</tr>
<tr>
<td><strong>Hypothesis 1.5.</strong></td>
<td>The charter school’s stage does not differ significantly based on the charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.</td>
<td>Pearson Chi-square</td>
</tr>
<tr>
<td><strong>Hypothesis 1.6.</strong></td>
<td>The charter school’s stage does not differ significantly based on the number of benefits reported by the respondents to teaching health education at the high school level.</td>
<td>Chi-square</td>
</tr>
<tr>
<td><strong>Hypothesis 2.0.</strong></td>
<td>The number of hours invested in teaching selected health topics does not differ significantly based on the type of charter school.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 2.1.</strong></td>
<td>The number of hours invested in teaching selected health topics does not differ significantly based on the type of charter sponsor/authorizer.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 2.3.</strong></td>
<td>The number of hours invested in teaching selected health topics does not differ significantly based on the presence/absence of a health education policy within the charter law at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 2.5.</strong></td>
<td>The number of hours invested in teaching selected health topics does not differ significantly based on the presence/absence of a health education state policy at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 2.7.</strong></td>
<td>The number of hours invested in teaching selected health topics does not differ significantly based on charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 2.8.</strong></td>
<td>The number of hours invested in teaching selected health topics do not differ significantly based on the geographical location of the school (urban, rural, and suburban).</td>
<td>ANOVA</td>
</tr>
</tbody>
</table>
Table 13

**Accepted Hypotheses continued**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 3.0.</strong> The number of hours invested in teaching health education topics that are aligned with the HECAT does not differ significantly based on the type of charter school.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 3.1.</strong> The number of hours invested in teaching health education topics that are aligned with the HECAT does not differ significantly based on the type of charter sponsor/authorizer.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 3.3.</strong> The number of hours invested in teaching health education topics that are aligned with the HECAT does not differ significantly based on the presence/absence of a health education policy within the charter law at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 3.4.</strong> The number of hours invested in teaching health education topics that are aligned with the HECAT does not differ significantly based on the presence/absence of a health education district policy at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 3.5.</strong> The number of hours invested in teaching health education topics that are aligned with the HECAT taught does not differ significantly based on the presence/absence of a health education state policy at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 3.6.</strong> The number of hours invested in teaching health education topics that are aligned with the HECAT does not differ significantly based on the number of benefits reported by the respondents to teaching health education at the high school level.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 3.7.</strong> The number of hours invested in teaching health education topics that are aligned with the HECAT does not differ significantly based on charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 5.1.</strong> The number of seven essential health skills taught does not differ significantly based on type of charter sponsor/authorizer.</td>
<td>ANOVA</td>
</tr>
</tbody>
</table>
**Table 13**

### Accepted Hypotheses continued

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 6.0.</strong> In high school, the majority of respondents identify multiple benefits (more than three) to offering health education in the classroom.</td>
<td>Descriptive</td>
</tr>
<tr>
<td><strong>Hypothesis 6.1.</strong> The number of benefits to teaching health education does not differ significantly based on type of charter school.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 6.2.</strong> The number of identified benefits to teaching health education does not differ significantly based on and the number of years of experience the respondent has in teaching.</td>
<td>Pearson correlation</td>
</tr>
<tr>
<td><strong>Hypothesis 6.3.</strong> The number of identified benefits to teaching health education does not differ significantly based on the number of years of experience the respondent has in administration.</td>
<td>Pearson correlation</td>
</tr>
<tr>
<td><strong>Hypothesis 7.1.</strong> The number of identified barriers to teaching health education does not differ significantly based on type of charter school.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 7.3.</strong> The number of identified barriers to teaching health education does not differ significantly based on the number of years of experience the respondent has in administration.</td>
<td>Pearson correlation</td>
</tr>
</tbody>
</table>

N = 23
<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Description</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 1.0</td>
<td>The majority of charter schools will be in the precontemplation or contemplation stage regarding teaching health education to their high school students.</td>
<td>Descriptive</td>
</tr>
<tr>
<td>Hypothesis 1.1</td>
<td>There is no statistically significant difference in a charter school’s stage by the presence/absence of a local charter law requirement to teach health education at the high school level.</td>
<td>Pearson Chi-square</td>
</tr>
<tr>
<td>Hypothesis 1.2</td>
<td>There is no statistically significant difference in a charter school’s stage by the presence/absence of a school district requirement to teach health education at the high school level.</td>
<td>Pearson Chi-square</td>
</tr>
<tr>
<td>Hypothesis 1.3</td>
<td>There is no statistically significant difference in a charter school’s stage by the presence/absence of a state requirement to teach health education at the high school level.</td>
<td>Pearson Chi-square</td>
</tr>
<tr>
<td>Hypothesis 2.2</td>
<td>There is no statistically significant difference in the number of hours invested in teaching selected health topics by rank of the state charter law (A-F).</td>
<td>ANOVA</td>
</tr>
<tr>
<td>Hypothesis 2.4</td>
<td>There is no statistically significant difference in the number of hours invested in teaching selected health topics by the presence/absence of a health education district policy at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td>Hypothesis 2.6</td>
<td>There is no statistically significant association between the number of hours invested in teaching selected health topics and the number of benefits reported by the respondents to teaching health education at the high school level.</td>
<td>Pearson correlation</td>
</tr>
<tr>
<td>Hypothesis 3.2</td>
<td>There is no statistically significant difference in the number of hours invested in teaching health education topics that are aligned with the HECAT by rank of the state charter law (A-F).</td>
<td>ANOVA</td>
</tr>
<tr>
<td>Hypothesis 4.0</td>
<td>None of the following factors will be more predictive than any other in determining the number of hours spent teaching selected health education topics:</td>
<td>Multiple linear regression</td>
</tr>
<tr>
<td>Hypothesis 5.0</td>
<td>There is no statistically significant difference in the number of seven essential health skills taught by type of charter school.</td>
<td>ANOVA</td>
</tr>
</tbody>
</table>
Table 14

Rejected Hypotheses continued

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Statistical Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypothesis 5.2.</strong> There is no statistically significant difference in the number of seven essential health skills taught by rank of the state charter law.</td>
<td>ANOVA</td>
</tr>
<tr>
<td><strong>Hypothesis 5.3.</strong> There is no statistically significant difference in the number of seven essential health skills taught and the presence/absence of a health education state policy at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 5.4.</strong> There is no statistically significant difference in the number of seven essential health skills taught and the presence/absence of a health education district policy at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 5.5.</strong> There is no statistically significant difference in the number of seven essential health skills taught and the presence/absence of a health education policy within the charter law at the high school level.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 5.6.</strong> There is no statistically significant association between the number of seven essential health skills taught and the number of benefits reported by the respondents to teaching health education at the high school level.</td>
<td>Pearson correlation</td>
</tr>
<tr>
<td><strong>Hypothesis 5.7.</strong> There is no statistically significant difference in the number of seven essential health skills taught between charter schools whose respondents believe health education can improve students overall academic performance and charter schools whose respondents do not believe health education can improve students overall academic performance.</td>
<td>t-test</td>
</tr>
<tr>
<td><strong>Hypothesis 7.0.</strong> In high school, the majority of charter school respondents will identify multiple barriers (more than two) that they believe prevent their school from offering more health education in the classroom.</td>
<td>Descriptive</td>
</tr>
<tr>
<td><strong>Hypothesis 7.2.</strong> There is no statistically significant association between the number of identified barriers to teaching health education and the number of years of experience the respondent has in teaching.</td>
<td>Pearson correlation</td>
</tr>
</tbody>
</table>

N = 18
Health Education in Charter Schools

The American Cancer Society, the American Diabetes Association, and the American Heart Association recommend that high quality health education be offered within all schools in the United States and that all schools adhere to the National Health Education Standards. The Joint Committee on National Health Education Standards (2007) recommends that students in grades 3 to 12 receive 80 hours of health education per academic year (i.e., 320 hours for all grades 9-12).

Although the charter schools in the current study fell short of the recommended 80 hours of health education per year, it was encouraging to note that the vast majority of charter schools (81.3%) were in the maintenance stage for teaching health education in grades 9-12 (i.e., “had been teaching health education for more than a year”). Considering that 86% of the charter schools had some sort of policy requirement to teach health education and that more than 3 of 4 of the schools had been open for business for greater than six years, it was not surprising to find the majority of charter schools teaching health education.

As hypothesized, the presence of a policy requirement to teach health education was very impactful. Charter schools that were required to teach health education via district, state, or charter policy were significantly more likely to be in the maintenance stage compared to schools without a policy requirement to teach health education. Such a finding demonstrates the importance of health education professionals working with charter school leaders and/or authorizing entities to help advocate for and establish policies that require health education.
Similar to many traditional public schools, the charter schools surveyed in the current study fell short of the recommended 80 hours of health education per year at each grade level. The type of charter school in the current study that invested the greatest number of hours (128 total hours) in health education in grades 9 through 12 was “athletic-based schools” (average of 32 hours per academic year). The total hours taught for the HECAT aligned health education topics was also the highest (77 total hours) among athletic-based schools (average of 19.25 hours per academic year). Since physical activity was the most frequently reported health topic being taught by the respondent charter schools, it is logical that athletic-based schools had the highest average number of hours compared to other types of charter schools.

Unlike School Health Profiles 2010 and SHPPS 2006, the current study did not look specifically at the percent of schools teaching specific health education topics, but rather at total number of hours spent teaching selected health topics. Although the methodology of the current study is somewhat different from the two aforementioned studies, some interesting comparisons can be made. For example, the five most prevalent health education topics (number of mean hours) taught by schools in the current study were 1) physical activity and fitness; 2) body systems; 3) alcohol/other drug use prevention; 4) nutrition and dietary behavior; and 5) human sexuality. In contrast, the top five health topics taught by the most number of schools in the School Health Profiles Survey were 1) physical activity and fitness; 2) nutrition and dietary behaviors; 3) alcohol/other drug use prevention; 4) tobacco use prevention; and 5) emotional and mental health (CDC, 2010a). SHPPS 2006 also examined the percentage of all schools that required teaching specific health topics. The top five health topics taught by the
greatest percentage of high schools were 1) alcohol/other drug use; 2) tobacco-use prevention; 3) HIV prevention; 4) other STD prevention; and 5) nutrition and dietary behavior (Kann et al. 2007).

It was interesting to note that “body systems” was the second most prevalent topic being taught by charter schools in the current study. Although anatomy and physiology (i.e. body systems) is not a health education topic nor was “body systems” included in the School Health Profiles Survey or the School Health Policies and Programs Study, the investigator of the current included this topic on the survey. The investigator wondered how many charter schools were investing valuable teaching time in anatomy and physiology and calling it “health education.”

According to the Joint Committee on National Health Education Standards (2007) the goal of health education is to help students adopt and maintain healthy behaviors. Health education curricula should provide students with the opportunity to develop skills to successfully practice behaviors that promote health and avoid or reduce health risks. Investing valuable teaching time in “body systems” is not the best use of health education classroom time. The time that schools spend teaching body systems can be better invested in helping students adopt and maintain healthy behaviors such as eating healthy, avoiding tobacco, alcohol, and other drugs, using appropriate contraceptive methods, engaging in regular physical activity, and resolving conflicts in a non-violent way.

The Joint Committee on National Health Education Standards also recommends that health education be offered at all grade levels, including high school. The ideal health education curriculum should be sequential. The grade levels at which health education were taught in the charter schools of the current study followed the same trend
as in traditional public schools: the amount of health education decreased as grade levels increased.

Like traditional public schools, the charter schools in the current study offered health education across multiple grades during the high school years. The percentage of charter schools in the current study that taught health education at each of the following grade levels was: grade 9 (67%), grade 10 (56%), grade 11 (44%), and grade 12 (38%). The median percentage of schools in the 2010 School Health Profiles that taught a required health education course included: grade 9 (65.6%), grade 10 (51.6%), grade 11 (21.1%), and grade 12 (18.2%) (CDC, 2010a). Thus, charter schools appeared to offer more health education in the higher grades than do traditional public schools. Perhaps charter schools have more flexibility in curriculum design and thus can incorporate more health education into the curriculum at the higher grade levels. It is also important to keep in mind that the investigator did not define health education to the respondents of the current study. Thus, how some respondents may have conceptualized “health education” may have been different from the classic definition of “health education.”

**Health Education Skills**

In addition to including adequate teaching time focused on appropriate topics, the ideal health education curriculum should be skill-based and should provide students with opportunities for rehearsing health behavior skills in guided practice settings. The National Health Education Standards provide written expectations for specific student skills related to health. For each standard there are performance indicators specific to grade levels. The standards and performance indicators provide a framework for the development of health education curricula.
In the current study, charter schools with a policy requirement to teach health education taught more of the recommended health skills than did those schools without a policy requirement. A range of 63% to 86% of charter schools was addressing the recommended skills (depending on the skill). In the current study, 43% of charter schools reported teaching all of the recommended health skills.

The most frequently taught health skill reported by schools in the current study was “practicing health enhancing behaviors to avoid or reduce risks.” The prominence of this skill in the charter school curriculum is corroborated by the fact that respondents’ number one perceived benefit of teaching health education is that it helps students to “avoid risk behaviors.”

In comparison to the current study, the School Health Profiles Survey 2010 and SHPPS 2006 measured the percentage of public schools addressing these specific skills in their health education curricula. The median percentage of schools by state reported by 2010 School Health Profiles (CDC, 2010a) that addressed all eight skills was 66.6% with an approximate state range of 86% to 95% for individual skills. Median percentage of schools reported by SHPPS (2006) was slightly lower and ranged from 70% to 76% (Kann et al., 2007).

“Advocating for personal, family, and community health” (62.7%) and “accessing valid health information” (67.2%) were the two health skills reported as being the least frequently taught by the charter schools in the current study. Similarly, the results from the SHPPS 2006 and School Health Profiles 2010 indicated that the same two skills were the least frequently taught in traditional public schools (80.3% and 88.8% respectively) (CDC, 2010a & Kann et al., 2007).
With multiple demands being placed on classroom teaching time, it is not surprising that teaching students how to advocate for health education causes and how to access valid health information received the least amount of instructional time. Lack of time for “special” subjects such as health education often causes those who are teaching health education to carefully prioritize their teaching topics. Health teachers may believe that other topics are more important than advocacy and learning how to access valid health information.

However, it is important to keep in mind that one of the most effective ways to positively influence community/public health is public policy change. Advocating for policy and social change has led to the passage of very important policies and legislation that have improved the health and well being of the American public (e.g., child employment prohibitions, workplace safety laws, food safety laws, smoke-free laws, seat belt laws, anti-bullying laws, etc.). Teaching advocacy skills to youth equips and empowers them to advocate for their own personal health and the health of their family, peers, and community. If youth do not learn such skills while in schools, where will they learn them?

Likewise, in this fast-paced information age of the Internet, media, and social media, it is also important that youth learn how to access valid health information. Youth need to be taught how to differentiate between true and false health information. Since teaching this evaluative process requires strong content knowledge in health education, teachers certified in health education and those with professional teaching experience in health education may be better equipped to teach such skills to youth than teachers who are not certified in health education.
Characteristics of Those Teaching Health Education

Charter schools tend to attract younger, less experienced teachers than traditional public schools (Miron & Applegate, 2007). In contrast, the School Health Profiles Survey (2010) reported that 52.3% of the lead health education teachers surveyed had been teaching health education for at least 10 years (CDC, 2010a). In contrast, only 33% of the respondents in the current study had more than 10 years of teaching experience in any topic and 92% reported being with the charter school ten years or less.

In addition to teaching experience, another factor that influences the quality of health education programs in schools is the educational background, training, and licensure of those who teach health education. The United States Federal Government believes that it is important for those who are teaching health education to be certified, licensed, or officially endorsed. Objective EMC-4.2.3 of Healthy People 2020 has established a target of 80.1% of newly hired staff who are teaching health education to be certified, licensed, or endorsed by the state in health education (U.S Department of Health and Human Services, 2011).

Results of the School Health Profiles Survey 2010 indicated that 85% of the teachers that were teaching health education in grades 6-12 in traditional public schools were certified in health education (CDC, 2010a). In contrast, only 35% of teachers in grades 9-12 in the current study who were teaching health education in charter schools were certified/licensed by the state. This finding points to the need for significant improvement within the charter school movement. According to the 2006 School Health Policies and Programs Study, 79% of the states surveyed had adopted a policy stating that newly hired staff who teach health education at the high school level must be certified,
licensed, or endorsed by the state to teach health education (Kann, Telljohann, & Wooley, 2007). Perhaps the adoption of this policy by an increasing number of states will have a “trickle down” effect on charter policy.

When the investigator looked at all teachers and all academic subjects within the responding charter schools in the current study, the proportion of certified teachers improved. In the current study (grades 9-12), the percentage of teachers who were licensed or certified by the state to teach the topic they were currently teaching was 70%. This result was higher than expected based on data from the Education Commission of the States (2011) which reported that only 15 states required 100% of their charter school teachers to be certified. Twenty one states offered waivers and provisions and four states did not have any certification/ licensure requirements for charter school teachers.

There is debate surrounding the impact of credentialed teachers on the academic achievement of students. Proponents of credentialing argue that licensure or certification of teachers guarantees a minimal level of competency in specific subject areas and that schools with a high proportion of licensed/certified teachers outperform schools that have a lower proportion of licensed/certified teachers. Furthermore, proponents of teacher credentialing suggest that more licensed/certified teachers in a school contributes to a higher Academic Performance Index (API) ranking than schools with a greater percentage of unlicensed or uncertified teachers (Futernick, 2002). A review of the literature by the National Council for Accreditation of Teacher Education (2012) summarized that teacher qualifications impact student academic achievement. Teacher qualifications reviewed include academic background, preparation in teaching, certification status and experience.
A North Carolina study of high school students found achievement growth was significantly higher if students were taught by teachers that were certified in the academic subject that they were teaching, were fully prepared, achieved high test scores on licensing test, and had more than 2 years teaching experience (Clotfelter, Ladd, & Vigdor, 2007). This study also found that teacher credentials were a stronger predictor of academic success than student characteristics such as race and gender supporting the argument that teacher credentials is especially important in more challenging learning environments, such as urban schools where teachers tend to be more novice and less experienced.

The American Association for Health Education (2007) recommends that all teachers responsible for the delivery of health education to students in pre-kindergarten through grade twelve need to possess the knowledge, professionalism, and skills to effectively prepare students to make healthy choices throughout life. The American Association for Health Education recommends that those who teach health education in the schools should be state certified health education specialists.

In contrast, opponents of credentialing argue that having college level training in teaching is not enough to be an effective teacher and that personal experience and community outreach is equally as important. Opponents are most often supporters of charter schools and prefer autonomy from traditional public schools and waivers from traditional policies (Jarosz, 2011).

In addition to certification/licensure, professional preparation in the subject matter being taught is also an important factor in determining the quality of a health education program. Healthy People 2020 objective EMC-4.1.3 has established a target of 84.5% of
newly hired staff who will be teaching health education should have undergraduate or graduate training in health education (USDHHS, 2011). Although the current study did not specifically address professional preparation of the person teaching health education, it can be inferred that less than a third of respondents teaching health education had formal professional preparation in health education. Only 30% of the respondents identified themselves as health teachers and 38% reported that a licensed or certified teacher in health education was teaching health education. The most frequently cited academic degree major was education (20%) with only 5% of the respondents having a master’s degree in health.

**Financial Factors Influencing Health Education**

 Compared to traditional public schools, charter schools are significantly underfunded. According to a recent study (Batdorf, Maloney, May, Doyle, & Hassel, 2010), charter schools receive 19% less (i.e., an average of $2,247) less per pupil than traditional public schools. In larger urban school districts, this disparity in funding can approach 25% (Finn, Osberg, Speakman, & Hassel, 2005). These financial barriers to offering health education and hiring certified teachers are further exacerbated by the fact that many charter schools also have to pay for their physical facilities, upkeep, and maintenance.

 Funding inequities between charter and public schools make it much more difficult for charter schools to attract and maintain the best teachers. As a result, charter schools are at higher risk for teacher attrition. Factors contributing to teacher attrition in schools include limited resources for classroom materials, large class sizes, lack of facilities and space, unsafe and unattractive facilities, lack of quality leadership, lack of
professional development opportunities, and low salaries (Adamson & Darling-Hammond, 2011). Similar to traditional public schools, teacher attrition in charter schools is highest in those schools located in high-poverty, low socioeconomic urban centers and neighborhoods. Teachers in such schools are likely to leave in pursuit of teaching jobs in higher-performing, higher salaried schools and improved working conditions (Adamson, 2011).

A study conducted by the National Center on School Choice, and funded by the U.S. Department of Education, looked specifically at characteristics of teachers in charter schools that leave the profession (Stuit & Smith, 2010). Teachers that were most likely to leave a charter schools were young, part-time, un-licensed/uncertified to teach, and lacked a degree in education. Thus, to the extent that teacher training improves the quality of teaching, all schools, including charter schools, need to address the professional development of their teachers so that quality health education is not compromised.

**Other Barriers to Health Education**

As noted previously, charter schools often face unique barriers to providing students with quality education. The current study examined perceived barriers that respondents’ believed inhibited their school from offering health education. The schools in this study identified fewer barriers than what was expected.

Lack of financial resources was listed as the most prevalent barrier. However, only 27% of respondents identified this as a barrier. It is possible that respondents under-reported the number of barriers. There was a weak, negative statistically significant association between teaching experience and perceived barriers to teaching health
education. Those respondents with more teaching experience identified fewer perceived barriers to health education. This outcome can be explained using two perspectives. One, the more experience one has in teaching, the greater his/her self-efficacy. Therefore he/she may perceive fewer barriers. On the other side, teachers with less experience could be more frustrated therefore, they perceive more barriers.

**Benefits to Health Education**

It was encouraging to note that four of five respondents in the current study perceived at least 3 benefits to teaching health education in charter schools. The top 3 perceived benefits included learning how to avoid high risk behaviors, learning how to prevent diseases and disorders, and improved student health status.

Even though a large proportion of respondents perceived benefits to teaching health education, perceived benefits, as an independent variable, may not be strong enough to increase the amount of health education being taught. Teachers also need to have high self-efficacy to teach health education in their respective settings and the resources needed to teach high quality health education classes. Due to funding inequities, charter schools may not be able to provide teachers with the resources needed to teach health education.

In a related study in physical education, Morgan and Hansen (2008) looked at teachers perceptions of the benefits and outcomes of teaching physical education. The teachers believed physical education was beneficial as means of physical activity and that it positively impacted learning and behavior in the classroom. However, the teachers did not believe that they were responsible for impacting student behavior. This again, may point to the importance of self efficacy. Petrie (2010) reported that classroom teachers
that participated in a physical education training program were more confident and motivated to transfer the physical education skills learned into their curriculum. Perhaps those teachers who are better trained develop stronger self efficacy and a stronger motivation to provide students with high quality health education.

**State Rank of Charter Law**

The results of this study compared the rank of state charter laws and the quantity and quality of health education being taught. States with charter laws that earned a rank of C, statistically outperformed states earning a rank of A or B. States with a rank of C included Georgia, Idaho, Louisiana, Massachusetts, Nevada, New Jersey, New Mexico, Ohio, Oregon, South Carolina, and Wisconsin. Perhaps charter schools in states with charter laws of moderate freedom (rank of C) are more likely to follow health education practices of their state and/or district policies than charter schools in states with charter laws of greater autonomy (rank of A and B) or with limited to no autonomy (rank of D and F) from traditional public schools. In other words, it can be theorized that a blend of autonomy and regulations is the most effective, which in turn, leads to a stronger curriculum and higher quality of teaching.

**Implications**

The current study was the first national study to look solely at health education in charter schools. The results of this study are positive in that 81% of the respondents indicated that their charter school is in the maintenance stage for offering health education and that the majority of schools (over 60%) reported addressing each recommended health education skill. It was not possible to accurately determine how much health education was being taught at each specific grade level since the current
study was delimited to measuring total health education taught in grades 9 through 12. For example, a charter school could be teaching health education in ninth grade, but not in grades 10, 11 and 12. The instrument did not measure how a students’ academic performance or success in a health education course was measured.

It is also important to note that the letters mailed with the survey in the current study asked that the person responsible for teaching health education complete the survey. Only 30% of the respondents indicated that they were health teachers. Therefore, it is possible that respondents inaccurately reported the amount of health education being taught, especially when looking at health skills. Health skills, as defined by National Health Education Standards, are curricula and grade specific. Respondents teaching health education without professional preparation/education in health education are likely to be unfamiliar with these standards. In addition, when asked if there was a need to increase or improve health education at their school, 93% answered yes. The resources requested by more than 50% of the respondents included free health education curriculum materials and a list of health education websites for teachers and students.

It can be argued that the ranking system of the state charter law should be broadened to include specific curriculum guidelines, including specifications for health education or have a separate ranking system specific to curricula guidelines and standards, as defined in the charter law. Although important, this could pose a difficult task as charter schools are formed based on the concept of being autonomous from district and state regulations. As the number of charter schools continue to grow, so will the number of youth attending charter schools. It is important that health education
professionals reach out to their colleagues in charter schools and offer support to ensure that the youth attending these schools are receiving excellent, quality health education.

Recommendations for Future Research

- Evaluate the amount of health education being taught at charter schools by specific grade level.
- Evaluate the specific training of those that teach health education at charter schools.
- Evaluate the specific teaching methods and materials used in health education classes at charter schools.
- Duplicate the School Health Profiles Survey specifically for lead teachers and principals at charter schools for a more accurate assessment of charter schools.
- Investigate the amount of support or continuing education/training those individuals teaching health education at charter schools receive during the school year (i.e., professional support and opportunities for development).
- Evaluate the grading scale and skill assessment used to measure academic performance in health education courses at charter schools.
- Survey parents of charter school students: What are their expectations of health education courses? What are their beliefs in the amount of health education being taught? What are their beliefs on the importance of health education in charter schools?
- This same type of study also needs to be conducted for students who are homeschooled.
References


_Eight component model:_ Retrieved December 3, 2009 from

http://www.cdc.gov/healthyyouth/CSHP/


Centers for Disease Control and Prevention. (2010b). *Student health and academic achievement._ Retrieved September 18, 2011 from

http://www.cdc.gov/HealthyYouth/health_and_academics/#1


Center for Disease Control and Prevention. (2011a). *Health education curriculum analysis tool._ Retrieved February 6, 2012 from

http://www.cdc.gov/healthyyouth/hec/index.htm


Center on Education Policy. (2008). Has student achievement increased since 2002?


Appendix A

Human Subjects Approval Letter
To: Timothy R. Jordan, Ph.D. and Lisa Ambrosetti
Department of Health Education and Rehabilitative Services

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

Signed: B.K. Chesney
Date: 03/11/10

Subject: IRB #106887
Title: Status of Health Education in our Nation’s Charter Schools

On 03/11/10, 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 is also strongly encouraged that the study be explained verbally to potential subjects.

Items Reviewed:
• IRB Application Requesting Expedited Review
• Survey Instruments

Designated as EXEMPT RESEARCH on: 03/11/2010

Please read the following attachment detailing Principal Investigator responsibilities.
Appendix B

Survey Instrument
Survey of Charter Schools: A National Study

Directions: Please do not put your name on this survey. All responses are confidential. Please complete the survey and return it in the pre-addressed, postage paid envelope within ten days. Thank you!

1. How many full-time teachers are employed by your charter school? _____ Full-time teachers.

2. Does your state have a policy that requires your charter school to teach health education at the high school level? (check only one) _____ Yes _____ No _____ I don’t know

3. Your school geographically resides within a specific school district. Does this school district have a policy that requires your school to teach health education at the high school level? (check only one) _____ Yes _____ No _____ I don’t know

4. Does your charter require your school to teach health education at the high school level? (check only one) _____ Yes _____ No _____ I don’t know

5. Which of the following statements best describes your school’s current practice regarding teaching health education to your high school students? (check only one)
   _____ We have not seriously thought about teaching health education at our school
   _____ We have seriously thought about teaching health education but have not taken any formal action
   _____ We are currently making plans to begin teaching health education next year
   _____ We have been teaching health education to our students for less than a year
   _____ We have been teaching health education to our students for more than a year
   _____ We taught health education in the past, but no longer do so

6. Which of the following barriers prevents/inhibits your charter school from offering more health education in the classroom at the high school level? (check all that apply)
   _____ There are no barriers that prevent us from offering more health education
   _____ We have an adequate amount of health education in our high school curriculum
   _____ Lack of qualified teachers
   _____ Lack of time in the school curriculum
   _____ Need to focus on core subjects (reading, math, science)
   _____ Health education is not required by our charter law
   _____ Students are not interested in health topics
   _____ Parents are not interested in health topics
   _____ Lack of financial resources
   _____ Lack of administrative support to teach health education
   _____ Other (please specify) _________________________________________________________________

7. What percent of all high school teachers in your charter school are certified or licensed by the state department of education to teach in the subject(s) that they are currently teaching? (circle only one)
   0%  10%  20%  30%  40%  50%  60%  70%  80%  90%  100%  I don’t know

8. At what grade level(s) does your charter school teach health education? (check all that apply)
   _____ 9   _____ 10   _____ 11   _____ 12   _____ Health Education is Not Taught
**Note:** If your school does **NOT** teach health education, please **skip** to page 3, question 13 and complete the survey. Thank you!

**Directions:** For each health topic listed below, please circle the total number of hours of health education that your high school students (grades 9-12) receive by the time they graduate. Thank you.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Alcohol or other drug use prevention</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>b. Body systems</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>c. Chronic disease (asthma, diabetes, cancer, heart, etc.)</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>d. Emotional/mental health</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>e. Environmental health</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>f. First Aid/CPR</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>g. Health care services</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>h. Human sexuality (HIV, STD, and pregnancy prevention)</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>i. Infectious disease (influenza, foodborne illness, etc)</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>j. Injury prevention and safety</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>k. Nutrition and dietary behavior</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>l. Physical activity and fitness</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>m. Tobacco-use prevention</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
<tr>
<td>n. Violence prevention (bullying, fighting, homicide, suicide prevention)</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11+</td>
</tr>
</tbody>
</table>
10. Who is doing the majority of health education teaching at the high school level in your charter school? (check only one)
   - Parents
   - Guest speakers from the community
   - Licensed/certified teachers in health education
   - Licensed/certified teachers in an academic subject other than health education (e.g. science or P.E.)
   - Non-licensed/non-certified teacher
   - School Nurse
   - School leader
   - Other (please explain) _______________________________________________________________

11. What percent of your teachers at your charter school who teach health education at the high school level are certified or licensed to teach health education by your state department of education? (circle only one)
   0%  10%  20%  30%  40%  50%  60%  70%  80%  90%  100%  I don’t know

12. Which of the following health skills are being taught in your high school health education classes? (check all that apply)
   - How to advocate for personal, family and community health
   - How to practice health-enhancing behaviors and reducing health risks
   - How to use interpersonal communication skills to enhance health
   - How to use decision-making skills to enhance health
   - How to analyze the influence of culture, media, technology, and other factors on health
   - How to access valid health information and health-promoting products and services
   - How to use goal-setting skills to enhance health
   - None of the skills above are being taught in our health education classes
   - I don’t know
   - Other (please specify) ____________________________________________________________

13. What do you believe are the benefits of teaching health education at the high school level in charter schools? (check all that apply)
   - There are no benefits of offering health education classes
   - Improved overall academic performance by students
   - Improved conduct of students in the classroom (i.e. less fighting, more attentive)
   - Students will learn how to avoid risky behaviors (i.e. drug use, smoking, alcohol use, etc.)
   - Students will learn about how to prevent diseases and disorders
   - The health status of the students will improve
   - The health status of students’ family members will improve
   - Other (please specify) ____________________________________________________________

14. Which of the following resources would be most helpful to your charter school to increase and/or improve the health education offered to your students at the high school level? (check all that apply)
   - There is no need to increase or improve health education at our school
   - Pre-packaged health education curriculum that we could purchase
   - Internet based health education curriculum for students
   - Webinars to help our teachers improve health education knowledge and teaching skills
   - Free health education curriculum materials/services
   - Consultation with an expert in health education
   - In service training seminars for teachers and staff
   - A list of health education websites for teachers and students
   - A summary of research supporting benefits of health education
   - A DVD based training toolkit in health education for teachers
   - Other (please specify) ____________________________________________________________

→ Please turn the page and complete the survey
Demographics & Background Items

15. What grades are included in your charter school? (circle all that apply) →
   K          1          2          3         4          5          6           7          8           9          10          11          12

16. Which of the following best describes your charter school? (check only one)
   ______ Art-based (e.g. performing arts, visual arts)          ______ Special Needs
   ______ Athletics-based                                     ______ Virtual/Cyber (e.g. Web-based)
   ______ Core Knowledge                                      ______ Vocational
   ______ Montessori                                          ______ Other (specify)____________________

17. How long has your charter school been open? ______ (number of years)

18. Which best describes the location of your charter school?    _____ Urban  _____ Suburban  _____ Rural

19. How many students (all grades) are enrolled in your charter school?    ________ students

20. Non-white students make up what proportion of your student body?  ______% 

21. Who is the charter authorizer/sponsor of your charter school? (check only one)
   ______ Local education agency/school board
   ______ State board of education
   ______ University or college
   ______ City Official
   ______ Commercial Entity
   ______ Other (specify) ____________________________

22. What is your official title at this charter school? (check all that apply)
   ______ Curriculum Specialist
   ______ Health Teacher
   ______ Principal
   ______ School Leader, Chief Administrative Officer
   ______ Classroom Teacher
   ______ Lead Teacher
   ______ School Nurse
   ______ Other (specify) ____________________________

23. What is your race/ethnicity? (check only one)
   ______ Asian/Pacific Islander
   ______ Black/African American
   ______ Hispanic/ Latino
   ______ Bi-Racial
   ______ White/Caucasian
   ______ Other (specify) ____________________________

24. How many years have you been with this charter school? __________ years

25. Including this school year, how many years of experience do you have in.....
   > Teaching ________ years
   > Administration ________ years

26. What is your sex? _____ Male     _____ Female

27. What degrees do you hold? (check all that apply) Academic Major (please list below for each degree)
   ______ Associate Degree ........................................
   ______ Bachelors Degree .......................................>
   ______ Master Degree ...........................................
   ______ Doctorate Degree .......................................>
   ______ No college education

28. In your opinion, does providing health education to students help to improve their overall academic achievement?    _____ Yes
   _____ No     _____ Not sure

Thank you for your professional courtesy!
Appendix C

Panel of Experts
Panel of Experts

Joan Durgin
Director of Development
Polly Fox Academy
1505 Jefferson Avenue
Toledo, OH 43604

Keith King, PhD, CHES
Professor of Health Promotion & Education
University of Cincinnati
2600 Clifton Ave.
Cincinnati, OH 45221

Carol Schwab
Lead Teacher
Phoenix Academy
1505 Jefferson Avenue
Toledo, OH 43604

Jodi Summers Holtrop, PhD, CHES
Department of Family Medicine
College of Human Medicine
Michigan State University
B105 Clinical Center
East Lansing, MI 48824
Appendix D

E-mail to Panel of Experts
Dear Name:

The Division of Health Education at the University of Toledo and the Ohio Council of Community Schools is conducting a national survey of charter schools. This study will assess current health education practices and perceived barriers/benefits of implementing health education in charter schools.

We need your help. As an expert in the field of education and/or survey research, we are asking that you invest approximately 10 minutes to review the attached survey. Your expert opinion is highly valued and will strengthen this study.

If you are agreeable to reviewing the survey, you may submit your suggested improvements in one of the following ways:

1) Mark the survey by hand and FAX your suggested edits to (419) 530-4759.

2) Use the “insert comments” function or “tracking changes” function of Microsoft Word and return the document via email.

Thank you for your time and professional courtesy in reviewing and returning this survey. Your participation will help to ensure a high quality research study. If possible, please return this survey within 10 days.

Should you have any questions regarding the survey, you can reach me, Lisa Ambrosetti, at (419) 509-0412 or lambrose@bex.net.

Sincerely yours,

Lisa Ambrosetti, MA  Timothy R. Jordan, Ph.D., M.Ed.
Doctoral Student  Associate Professor of Health Education
Division of Health Education  Director, Public Health Undergraduate Program
Appendix E

Cover Letter for First Pilot Mailing
Date

Name of School
Address 1
City, State, Zip

Dear School Leader/Health Education Teacher,

The University of Toledo and the Ohio Council of Community Schools – a sponsor of charter schools in Ohio – are working together to conduct a national study of charter schools. Your school has been randomly selected to participate in the pilot testing stage of this national study.

The pilot testing stage involves testing the consistency of the items on the questionnaire by having the same person at your school complete the survey twice within a 10-day span. We will send the questionnaire to your school twice within a 10-day span. Each time you receive it, please have the same person complete it and return to us immediately.

Please route this survey to the person who is responsible for teaching health education at your school. If there is not a specific Health Education teacher or curriculum leader, then please route this survey to the School Leader.

The survey takes approximately 12 minutes to complete. Enclosed is a $2 bill as a token of our appreciation for your time. For your convenience, we have enclosed a self-addressed, stamped envelope. We will send the second survey in approximately one week along with another $2 bill.

Your survey responses are totally confidential. Please do not write your name or any other personal identifying information on the survey. We do not want to know your identity or your school’s name. We are using the results of your two questionnaires for pilot testing only.

If you have any questions or would like a copy of the final report, please contact Lisa Ambrosetti, doctoral student, by e-mail at lambrose@bex.net or by phone (419) 530-4725.

Thank you for your professional courtesy.

Sincerely,

Allison Perz
Executive Director
Ohio Council of Community Schools

Timothy R. Jordan, PhD
Associate Professor Health Education
University of Toledo
Appendix F

Cover Letter for Second Pilot Mailing
Dear School Leader/Health Education Teacher,

The University of Toledo and the Ohio Council of Community Schools – a sponsor of charter schools in Ohio – thank you for your participation in the pilot testing stage of a national study of charter schools.

As indicated in the first letter, a $2 bill is enclosed, along with a second copy of the survey. If you have already completed and returned the first survey, thank you. It would be much appreciated if you complete and return the second survey in the enclosed, self-addressed stamped envelope. If you have not completed the first survey please complete both surveys and return in the provided self-addressed stamped envelopes.

As a reminder, the pilot testing stage involves testing the consistency of the items on the questionnaire by having the same person at your school complete the survey twice within a 10-day span. Please route this survey to the person who completed the first survey. This person should be the person responsible for teaching health education at your school. If there is not a specific Health Education teacher or curriculum leader, then please route this survey to the School Leader.

Again, your survey responses are totally confidential. Please do not write your name or any other personal identifying information on the survey. We do not want to know your identity or your school’s name. We are using the results of your two questionnaires for pilot testing only.

If you have any questions or would like a copy of the final report, please contact Lisa Ambrosetti, doctoral student, by e-mail at lambrose@bex.net or by phone (419) 530-4725.

Thank you for your professional courtesy.

Sincerely,

Allison Perz
Executive Director
Ohio Council of Community Schools

Timothy R. Jordan, PhD
Associate Professor Health Education
University of Toledo
Appendix G

Cover Letter for Third Pilot Mailing
Third Request: Survey for National Study of Charter Schools

Dear School Leader/Health Education Teacher,

We need your help! Over the last 5 weeks, we have sent you two requests via mail to complete an important survey regarding health education in charter schools. Both mailings included a survey on green paper and postage paid envelopes. Both mailings also included a $2.00 bill as a token of our appreciation for completing the two surveys.

Unfortunately, we have yet to receive your two completed surveys.

If you recall, your school was randomly selected to participate in the pilot testing phase of a national study of charter schools. This pilot testing stage involves having the same person at your school complete the survey twice within a 10-day span. Having a matched pair of surveys from the same person allows us to test the reliability of the survey items.

The person that completes the two surveys should be the person responsible for teaching health education at your school. If there is not a specific Health Education teacher or curriculum leader, then the survey should be routed to the School Leader. It is important that the same person complete both surveys.

If you would be so kind, please complete both surveys that were mailed to you and return these in the self-addressed, postage paid envelopes that were included in our previous mailings. Thank you!

Should you have any question regarding this study or if you would like to request a copy of the final report, please contact Lisa Ambrosetti, by e-mail at lambrose@bex.net or by phone (419) 530-4725.

Thank you for your professional courtesy.

Sincerely,

Allison Perz
Executive Director
Ohio Council of Community Schools

Timothy R. Jordan, PhD
Associate Professor Health Education
University of Toledo
Appendix H

Cover Letter for First Mailing
Dear Mr./Ms. Last Name

Your school is one of 750 charter schools from across the United States that has been randomly selected to participate in a national study. This study is being conducted by the University of Toledo (Ohio) in partnership with the Ohio Council of Community Schools – a major sponsor of charter schools in Ohio. The purpose of this research is to assess the status of health education in charter schools.

Enclosed is a survey. Please route this survey to the person who is responsible for teaching health education at your school. If there is not a specific Health Education teacher or curriculum leader, then please route this survey to the School Leader.

The survey takes approximately 12 minutes to complete. Enclosed is a $1 bill as a token of our appreciation for your time. For your convenience, we have enclosed a self-addressed, stamped envelope. A response within the next 10 days is greatly appreciated!

Your survey responses are totally confidential. Please do not write your name or any other personal identifying information on the survey. We do not want to know your identity or your school’s name. Only aggregate data from the entire sample of schools will be analyzed and reported. Your school name and your survey responses will not be connected.

If you decide not to participate, there will be no penalty or any loss of benefits to which you would be otherwise entitled. Should you have any question regarding this study or if you would like to request a copy of the final report, please contact Lisa Ambrosetti, by e-mail at lambrose@bex.net or by phone (419) 530-4725.

Thank you for your professional courtesy.

Sincerely,

Allison Perz
Executive Director
Ohio Council of Community Schools

Timothy R. Jordan, PhD
Associate Professor Health Education
University of Toledo

Lisa M. Ambrosetti
Doctoral Student
University of Toledo
Appendix I

Cover Letter for Second Mailing


Regarding 2nd Request for Survey for National Study of Charter Schools

Dear Mailing Contact,

We need your help! Approximately two weeks ago we mailed you a letter, a survey on green paper, and a $1.00 bill as a token of our appreciation for completing the survey. As a reminder, this is a national study of charter schools and your school is one of 750 selected to participate.

If you have already completed and returned the survey, thank you! If you have not yet completed the survey it is not too late to complete and return it to us. For your convenience we have enclosed another copy of the survey along with a second enclosed postage paid envelope.

Please route this survey to the person who is responsible for teaching health education at your school. If there is not a specific Health Education teacher or curriculum leader, then please route this survey to the School Leader. A response within the next 10 days is greatly appreciated!

Your survey responses are totally confidential. Please do not write your name or any other personal identifying information on the survey. We do not want to know your identity or your school’s name. Only aggregate data from the entire sample of schools will be analyzed and reported. Your school name and your survey responses will not be connected.

Should you have any question regarding this study or if you would like to request a copy of the final report, please contact Lisa Ambrosetti, by e-mail at lambrose@bex.net or by phone (419) 530-4725.

Thank you for your professional courtesy.

Sincerely,

Timothy R. Jordan

Lisa M. Ambrosetti

Allison Perz
Executive Director
Ohio Council of Community Schools

Timothy R. Jordan, PhD
Associate Professor Health Education
University of Toledo

Lisa M. Ambrosetti
Doctoral Student
University of Toledo
Appendix J

Cover Letter for Third Mailing
Third Request for Survey - National Study of Charter Schools

Dear Mailing Contact:

We really need your help! Over the past month, we have attempted to contact you by mail on two previous occasions. The previous mailings included a survey (on green paper) and a postage paid return envelope. The first mailing also included a $1.00 bill as a token of our appreciation for completing the survey. Unfortunately, we have yet to receive your completed survey. If you have completed and mailings have crossed please disregard.

The goal of this national study is to help charter schools develop strong health education curricula. Your school was one of 750 charter schools randomly selected to participate in this very important study. We are asking that the survey be completed by the person who is responsible for teaching Health Education at your school. If there is not a specific Health Education teacher or curriculum leader, then the survey should be routed to the School Leader.

Your ideas and perceptions are very important to us! It is not too late to complete and return the survey. The survey takes approximately 12 minutes to complete. Please return the survey in one of the postage paid envelopes that were included in the first two mailings. Thank you!

Should you have any question regarding this study or if you would like to request a copy of the final report, please contact Lisa Ambrosetti, by e-mail at lambrose@bex.net or by phone (419) 530-4725.

Thank you for your professional courtesy.

Sincerely,

Allison Perz
Executive Director
Ohio Council of Community Schools

Timothy R. Jordan
Executive Director
Ohio Council of Community Schools

Lisa M. Ambrosetti
Executive Director
Ohio Council of Community Schools
Appendix K

Cover Letter for Fourth Mailing
Final Request: Survey for National Study of Charter Schools

Dear Mailing Contact,

We need your help! Your school was one of 750 charter schools randomly selected to participate in a national study. We have yet to hear from you.

Over the last month, three previous requests have been sent via postal mail asking you or one of your staff members to complete a survey regarding health education in charter schools. You are receiving this e-mail because we have yet to receive a completed survey. It is important to have as many completed surveys as possible in order to ensure that all parts of the United States are represented.

Your help is greatly appreciated!

In case this is the first time you are hearing of the study, attached is a PDF version of the survey. We are asking that the survey be completed by the person who is responsible for teaching health education at your school. If there is not a specific Health Education teacher or curriculum leader, then the survey should be routed to the School Leader.

Please FAX the completed survey to 419-720-5205. Attention Dr. Jordan.

You may also mail the completed survey to:

Ohio Council of Community Schools
3131 Executive Parkway
Suite 306
Toledo, OH 43606

Should you have any questions regarding this study or if you would like to request a copy of the final report, please contact Lisa Ambrosetti, by e-mail at lambrose@bex.net or by phone (419) 509-4012.

Thank you for your professional courtesy.

Sincerely,
Lisa M. Ambrosetti
Doctoral Student
University of Toledo