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Sexual Health Education Policy: Influences on Implementation of Sexual Health Education Programs

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Abstract

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M.S.Ed, Southern Illinois University- Carbondale, 2003

B.S., Xavier University of Louisiana, 2000

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

High school youth in Grades 9–12 who are in public schools without comprehensive sexual health education (CSHED) are more likely to engage in high-risk sexual behaviors and have higher rates of HIV and sexually transmitted diseases than are their peers in schools with CSHED. The purpose of this correlational study was to explore the statistical relationship between the consistent implementation of CSHED, before and after the enactment of the Chicago Public Schools' (CPS) sexual health education policy, and the sexual risk behaviors of Chicago high school youth in Grades 9–12. The study was based on Antonovsky's salutogenic model of health and wellbeing. CPS students' sexual risk behaviors were analyzed using data obtained from the Youth Risk Behavior Surveillance System (YRBSS) for the years of 2007 and 2013. Logistic regression was used to estimate prevalence and odds ratios of each sexual risk behavior. The findings showed a complex pattern of and variances across the sexual risk behaviors analyzed. The prevalence of sexual behaviors among all students remained relatively stable. The prevalence estimates for students who drank alcohol or used drugs before the last sexual encounter and who were never taught about AIDS or HIV increased from 2007 to 2013. The likelihood of not using birth control pills before the last sexual intercourse encounter decreased among Black students; the likelihood that Hispanic/Latino students ever had sex, and had sex with 4 or more people in their life, decreased. The decrease of sexual risk behaviors indicates a positive influence by CSHED, while the increases indicate continuing challenges to the promotion of healthy sexual behaviors. These findings show the need for legislators and school administrators to increase support for the enactment of CSHED policy to help mitigate the sexual risk behaviors of high school youth.

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Chapter 1: Introduction to the Study

Introduction

Sexual health education is the foundation on which sexually transmitted diseases (STD) and human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) prevention programs were built (Francis, 2009; Galson, 2008). Access to effective comprehensive sexual health education supports the development of well-rounded, balanced, and sexually healthy youth (Sex Information and Education Council of Canada [SIECCAN], 2009). Most states have policies requiring HIV education as a complement to a broader comprehensive sexual health education program (Guttmacher, 2016). According to the Future of Sex Education (FoSE) Initiative (2012), there are clear guidelines and standards to assist states that do not have specific policies on sexual health education with the development and/or evaluation of programs to ensure that schools "design and develop sexual health education that is planned, sequential, and part of a comprehensive school health education approach" (p. 6).

Educators initially implemented sexual health education to counter misinformation that was circulated throughout society, but it has now evolved into a field of study that focuses on improving youths' quality of life. Sexual health education is a shared responsibility of state and local government, parents, teachers, the community, and school administrators, and it requires the attention of all entities to support the development of sexually healthy youth (Corngold, 2010; SIECCAN, 2009). Sex education provides young people with necessary information to make informed choices regarding their sexual health (Sexuality Information and Education Council of the United States. [SIECUS], 2012; FoSE, 2012). Literature related to sexual health education is

overwhelmingly abundant, and literature regarding school administrators' perceived barriers to implementing sexual health education is available in abundance. However, the degree to which the consistent implementation of comprehensive sexual health education influences sexual risk behaviors among high school youth in grades 9–12 in comparison to the enactment of sexual health education policy is limited.

The outcomes from this study were directly associated with the implications for social change, and indicate the need for legislators and school district leaders to increase support for the enactment of comprehensive sexual health education policy that will help mitigate the sexual risk behaviors of high school youth through the implementation of standardized comprehensive sexual health education. Additionally, this study contributed to the existing literature by showing how: (a) the inequities experienced by youth contribute to the sexual risk behaviors they engage in, and (b) sexual risk behaviors can be addressed as part of a comprehensive, standardized health education program. In this study, I sought to explore the statistical relationship between the consistent implementation of comprehensive sexual health education before and after the enactment of the Chicago Public School's (CPS) sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. Comprehensive sexual health education helps delay onset of sexual activity, reduce high-risk sexual behaviors, and lower the STD/HIV incidence rates among high school youth (CDC, 2012c; Kirby, 2008).

In Chapter 1, I offer an introduction to comprehensive sexual health education and to the rationale for this research. More specifically, I offer a guided narrative on the relevance of the research to the future of adolescent health, organized by the following

topic areas: (a) the background of comprehensive sexual health education, (b) the problem associated with the inconsistent implementation of comprehensive sexual health education, (c) the purpose of this study, (d) the research questions and hypotheses, (e) the theoretical frameworks used as the foundation for the study, (f) the study design, (g) key definitions, (h) the assumptions associated with the study, (i) the scope of the study, including the delimitations and limitations, (j) the significance of the study, and (k) a brief summary of the information discussed throughout the chapter.

Background

Legislation at the federal level, H.R. 332, the Real Education for Healthy Youth Act, was introduced in 2011. This legislation mandated that federally funded comprehensive sexual health education programs must seek to promote healthy and safe relationships and include the most current and accurate scientific information available (SIECUS, 2012).

A large-scale study of sex education laws and policies with regard to preventing teen pregnancy in all U.S. states showed that abstinence-only education did not reduce, and likely increased, teen pregnancy rates (Stanger-Hall & Hall, 2011). Stanger-Hall and Hall (2011) also reported that comprehensive sex and/or STD education that includes abstinence as a desired behavior was associated with the lowest teen pregnancy rates across states. My study's discussion on the U.S. government's funding of abstinence only and teen pregnancy prevention (abstinence plus) programs is limited to the effectiveness of abstinence-only state policies as compared to state policies that support the consistent implementation of sexual health education via mandates for comprehensive sexual health education *only* if sexual health education is taught.

Support for sexual health education continues to increase (Boonstra, 2014). Sex Education in America (Kaiser Family Foundation, 2004) is a survey of national significance and one of the most comprehensive studies conducted to assess the views of students, teachers, parents, and principals on sex education in the classroom. This study, a follow up to the Sex Education in America national survey conducted in 2000, was based on two nationwide telephone surveys, a survey of the general public, and of principals. The survey of the general public was conducted among a random nationally representative sample of 1,759 respondents 18 years of age or older, including an oversample of parents of children in 7th through 12th grades (Kaiser Family Foundation, 2004). This survey showed that only 7% of Americans said that sexual health education should not be taught in schools. Further, the study showed that 15% of Americans believed that schools should teach only about abstinence from sexual intercourse and should not provide information on how to obtain and use condoms and other contraception (Kaiser Family Foundation, 2004). Forty-six percent of the respondents believed that abstinence-plus or comprehensive sexual health education should be taught even though abstinence is the only guarantee of unintended outcomes. However, this study did not address how the inconsistent implementation of sexual health education within state or local governments affects the sexual health and sexual risk behaviors of youth.

Support for comprehensive sexual health education among parents has been well studied. A telephone survey of parents of school age children in Minnesota conducted from September 2006 to March 2007 indicated that the majority of parents favored comprehensive sexual health education and supported the inclusion of specific topics that

may be viewed as controversial (Eisenberg, Bernat, Bearinger, & Resnick, 2008). The researchers also determined that there was a mismatch between parents' expressed opinions and preferences, and the actual sexual health education content as it was currently being taught in the majority of public schools in Minnesota. Although the study showed parental support for sexual health education, it also showed that the views of the parents did not necessarily translate to the development of policy to support the consistent implementation of comprehensive sexual health education.

Prior to the passing of Illinois' Sexual Health Education Bill in 2013, the Illinois Campaign for Responsible Sex Education (2007) conducted a study among Illinois sex education teachers to ascertain their practices, beliefs, and influences. This study showed that 93% of sex education teachers who participated in the study offered some component of sex education; however, two-thirds of these teachers omitted critical elements of comprehensive sexual health education. Ninety-two percent of the teachers surveyed said the curriculum greatly influenced the topics they covered. This study also showed that the inconsistent implementation of comprehensive sexual health education was directly related to the lack of state or local standards, policies, and funding.

The Kaiser Family Foundation (2004) has noted, "Principals report that the most influential players in sex education are their local governments and school districts" (p. 50). The lack of standardized state sexual health education policy leaves the implementation of sexual health education to the discretion of local and district administrators (Corngold, 2010; Fornby, Hirst, Owen, Hayter, & Stapleton, 2010). Additionally, both the Guttmacher Institute (2016) and Fornby, Hirst, Owen, Hayter, and Stapleton (2010) have discussed the implementation of policies governing sexual health

education in schools at the local level. They found that varying mandates for sex education at the local and district levels, regardless of the type of sexual health education taught, have potentially encouraged a decentralization of sexual health education. This has resulted in the inconsistent implementation of sexual health education.

On the contrary, Atkins and Bradford (2013) conducted a study to evaluate how state-level sex education policies affect the youth population. More specifically, Atkins and Bradford found that states that require sexual health education and information on the use of contraceptives, or states that mandate education but allow local districts to determine the content or curriculum to be used, have higher rates of contraception use when teens are sexually active. Further, Atkins and Bradford found that sexually active teens are less likely to use contraception in states that require sexual health education and the inclusion of abstinence content. The research shows that the variance in sexual health education curriculums used at the local level does not negatively affect the sexual health of youth. However, Adkins and Bradford did not evaluate the states with policies that mandate comprehensive sexual health education only if a local government elects to deliver it.

Support for comprehensive sexual health education is apparent and exists across a variety of stakeholders invested in the development of sexually healthy youth. Alton, Valois, Oldendick, and Drane (2009) conducted telephone interviews with 547 registered voters in South Carolina to ascertain their opinions on the use of abstinence-only versus comprehensive sexual health education. Approximately 52% of the individuals the researchers contacted agreed to participate in the study, 25% declined to participate, 20% were unable to participate for various reasons, and less than 2% were unable to

participate due to language barriers. Overall, 81% of registered voters who participated in the survey supported comprehensive sex education. Only 4% of the respondents did not support a single sex education topic. Findings from this poll showed that the majority of registered voters in a highly conservative state supported comprehensive sex education (Alton, Valois, Oldendick, & Drane, 2009).

Mufune (2008) conducted 18 focus group discussions and eight key informant interviews to determine to what extent stakeholders (i.e., teachers, parents, and health professionals) supported sex education in Namibia. Mufune (2008) believed that understanding the stakeholders' perspectives was necessary to implement new and enhance existing sexual health education programs. The study showed broad support for sexual health education. More specifically, stakeholders indicated that sex education programs should be taught by teachers and health workers, and should be specifically targeted to youth.

Researchers have studied students' ability to access accurate information related to their sexual health and have found that students desire information to live a sexually healthy adolescent life. For instance, Benzaken, Ashutosh, Palep, and Gill (2011) conducted a study to determine students' exposure to sexual health education, and to identify the students' perceptions of their access to information regarding their sexual health and their preferences on the implementation of sexual health education. The researchers found that of the 427 students who completed the survey, 90% felt sexual health education was an important part of the school curriculum, but only 60% were exposed to sexual health education in school. Forty-five percent of the students surveyed felt they received good advice about contraception and sexual health. Benzaken,

Ashutosh, Palep, and Gill (2011), however, did not assess the type of sex education the students received. The findings from my study will further reduce the gaps in the literature related to the relationship between the consistent implementation of sexual health education and the sexual risk behaviors of youth.

Constantine, Jerman, and Huang (2007) conducted a study of parents in California and found that, consistent with previous national and state-level studies, the majority of California parents preferred approaches to sexual health education that included instruction on how to prevent teen pregnancy and the spread of STDs and HIV among students who decide to have sex.

Adolescents have the right to sexual knowledge, and the skills and abilities to make rationale and well-informed decisions. The ultimate purpose of comprehensive health education, by virtue of default sexual health education, is to equip adolescents with the tools needed to evaluate different ways of life and choose intelligently among the options in front of them (FoSE, 2012; Corngold, 2011).

I found that scholarly literature was replete with studies documenting the effectiveness of school-based sexual health education in helping youth reduce their risk for pregnancy, HIV, and STDs. My study contributed to the body of literature by examining the consistent implementation of sexual health education in relation to the sexual-risk behaviors of youth in grades 9–12. Prior to my research, there was limited literature in which researchers explored the statistical relationship between the consistent implementation of comprehensive sexual health education before and after enactment of sexual health education policy.

Problem Statement

High school youth in grades 9–12 who are in public schools without comprehensive sexual health education are more likely to engage in high-risk sexual behaviors and have higher rates of HIV and STDs than their peers in schools with comprehensive sexual health education. Nearly half (46%) of female and over half (60%) of male high school students in Chicago reported that they have had sexual intercourse (CDC, 2011). There are many possible factors contributing to this problem, including socio-economic and cultural factors, knowledge, and peer pressure (Benzaken, Palep, & Gill, 2011).

CPS, the third largest public school system in the United States, currently mandates comprehensive school-based sexual health education; CPS adopted a new comprehensive school-based sexual health education policy in 2013 that will be fully implemented in 2016 (CDPH, 2013; SIECUS, 2013). CPS implemented comprehensive school-based sexual education in 2008, but the state of Illinois has limited the mandate for the teaching of comprehensive sexual health education to schools that choose to do so. This inconsistency in sexual health policies is a problem that impacts the overall public health of youth in Illinois. According to the CDC (2015a) young people aged 13-24 accounted for an estimated 22% of all new HIV diagnoses in the United States in 2014. Half of the nearly 20 million new STDs reported each year were among young people between the ages of 15–24 (CDC, 2015b). Furthermore, in 2014, approximately 250,000 babies were born to teen girls aged 15–19 years in 2014 (CDC, 2015c). According to the CDC's, Office of Adolescent Health, as of 2014, Illinois ranked 26th in the number of pregnancies to females aged 15-19, and had the 24th highest teen birth rate

among females aged 15–19. In 2014, Chicago adolescents and young adults between 13 and 24 years old accounted for 65% and 70% of gonorrhea and chlamydia cases, respectively (CDPH, 2014). Moreover, the teen birth rate in Chicago was one and a half times higher than the national average (CDPH, 2013). The ultimate goal of comprehensive sexual health education is to provide a foundation of support for youth to mature into sexually healthy adults (SIECUS, 2011b).

Purpose of the Study

The purpose of this correlational study was to explore the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy in 2008, and the sexual risk behaviors of Chicago high school youth in grades 9–12. In this study, I analyzed sexual risk behavior data obtained by the CPS' Youth Risk Behavior Survey (YRBS) between the years of 2007 and 2013.

For the purposes of this study, comprehensive sexual health education was the independent variable, and sexual risk behaviors were the dependent variables. Sexual risk behaviors, as defined by the Youth Risk Behavior Surveillance System (YRBSS), are sexual risk behaviors that contribute to unintended pregnancy and STDs, including HIV infections (CDC, 2013a). The YRBSS includes the national and district-school-based YRBS, conducted by CDC and state and large urban school districts, respectively.

Research Questions and Hypotheses

Research Questions

In this study, I designed and worked to answer the following research questions:

1. How does the implementation of comprehensive sexual health education influence (increase or decrease) the following sexual behaviors of Chicago high school youth in grades 9–12:
    - Ever had sexual intercourse.
    - Sexual intercourse before the age of 13 years (for the first time).
    - Sexual intercourse with four or more persons during their life.
    - Currently sexually active (sexual intercourse with at least one person during the 3 months before the survey).
    - Did not use a condom (during last sexual intercourse among students who were currently sexually active).
    - Did not use birth control pills (before last sexual intercourse to prevent pregnancy among students who were currently sexually active).
    - Did not use any method to prevent pregnancy (during last sexual intercourse among students who were currently sexually active).
    - Drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active).
    - Were never taught about AIDS or HIV in school.
2. How does the implementation of comprehensive sexual health education influence (increase or decrease) sexual behaviors of Chicago high school youth in grades 9–12 , by race/ethnicity (covariate)?

3. How does the implementation of comprehensive sexual health education influence (increase or decrease) sexual behaviors of Chicago high school youth in grades 9–12, by gender (covariate)?

Hypotheses

Null Hypothesis (H_{01}): The consistent implementation of comprehensive sexual health education is not significantly related to the sexual risk behaviors among Chicago high school youth in grades 9–12.

Research Hypothesis (H_1): The consistent implementation of comprehensive sexual health education is significantly related to the sexual risk behaviors among Chicago high school youth in grades 9–12.

Null Hypotheses ($H0_2$): The consistent implementation of comprehensive sexual health education does not significantly influence (increase or decrease) the sexual risk behaviors among Chicago high school youth in grades 9–12.

Research Hypothesis (H_2): The consistent implementation comprehensive sexual health education does significantly influence (increase or decrease) the sexual risk behaviors among Chicago high school youth in grades 9–12.

Theoretical Framework

Comprehensive sexual health education is rooted in research and reflects the core elements associated with many theoretical frameworks. For this study, the salutogneic model/theoretical framework served as the foundation for my exploration of the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of sexual health education policy, and the

sexual risk behaviors of Chicago high school youth in grades 9–12. The salutogenic model explores the origin of health while focusing on creating health instead of disease (Lindstrom & Eriksson, 2009). Researchers use the salutogenic model to study the strengths and weaknesses of disease prevention, health promotion, and the development of practices and healthy public policies (Antonovsky, 1996). The implementation of comprehensive sexual health education in schools is anchored by the foundational construct of the salutogenic model. The correlation between positive health outcomes at the individual (high school youth), organizational (schools), and population (state and local policy) levels emphasizes the importance of a structured environment and people are encouraged to identify and use the resources available to them to promote the health of the individual, community, and the nation (Mittlemark & Bull, 2013; Lindstrom & Eriksson, 2009). Youth are a product of, and deeply influenced by, their environments (Stranger-Hall & Hall, 2011). The salutogenic model takes the concept of health promotion, as the foundation, and intertwines the sense of coherence, and the availability of internal and external resources (generalized resistance resources) to help individuals, organizations, and society move toward optimal well-being (Mittlemark & Bull, 2013; Becker, Glascoff, & Felts, 2010). Chapter 2 includes a more detailed discussion of the theoretical framework for this study.

Nature of the Study

In this study, I employed a correlational research model to examine the relationship between the consistent implementation of comprehensive sexual health education (the independent variable) and sexual risk behaviors (the dependent variables)

of Chicago youth via the analysis of secondary data collected via CPS' YRBS for the for the years 2007 - 2013. These data allowed for a comparison of the sexual risk behaviors as reported by high school youth in grades 9–12, stratified by gender and race/ethnicity, the covariates. In the study, I determined the influences of comprehensive sexual health education policy on Chicago high school youths' sexual risk behaviors.

Definitions

Abstinence-only curriculum: Abstinence-only curriculum is a sexual health curriculum in which abstinence only until marriage is taught as the only option within sexuality education programs (Illinois Consortium on Adolescent Pregnancy Prevention, 2002).

Abstinence-plus curriculum (comprehensive sex education): Abstinence-plus curriculum is a sexual health curriculum in which abstinence and methods of contraception are taught within a sexuality education program (Illinois Consortium on Adolescent Pregnancy Prevention, 2002).

Comprehensive sexual health education (comprehensive sexuality education): Comprehensive sexual health education are programs that start in kindergarten and continue through 12th grade. These programs include age-appropriate, medically accurate information on a broad set of topics related to sexuality, including human development, relationships, decision-making, abstinence, contraception, and disease prevention. Sexuality education programs provide students with opportunities for developing skills, as well as learning information (FoSE 2012; SIECUS, 2008).

Human immunodeficiency virus (HIV): HIV is the virus that can lead to acquired immunodeficiency syndrome, or AIDS (CDC, 2013b).

Sexual risk behaviors: Sexual risk behaviors are sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infections (CDC, 2013b).

Sexually transmitted disease (STD): Sexually transmitted disease is a disease that is spread primarily through sexual activity or contact (CDC, 2013b).

Socioeconomic status: Socioeconomic status is the social standing or class of an individual or group. It is often measured as a combination of education, income and occupation (American Psychological Association [APA], 2014)

Assumptions

In this study I assumed that: (a) socioeconomic factors associated with large metropolitan areas are representative of health disparities that directly impact the data I analyzed, (b) the consistent implementation of comprehensive sexual health education is positively influenced by the enactment of sexual health education policy, (c) the consistent implementation of comprehensive sexual health education influences (i.e., decreases the rate) the sexual risk behaviors among high school youth, and (d) the consistent implementation of comprehensive sexual health education is consistently significant in relation to the race/ethnicity and gender of high school youth.

Scope and Delimitations

In this study, I sought to determine if there was a correlation between the consistent implementation of comprehensive sexual health education and sexual risk behaviors among Chicago high school youth in grades 9–12 before and after enactment of CPS' sexual health education policy. It is important to focus on the implementation of sexual health education rather than the curriculum used because the use of specific

curriculums is not standardized and therefore cannot be included as an outcome of this study, though it may be directly related to the overall problem.

I limited the study sample to the high school students in grades 9–12 at the time the YRBSs were conducted for CPS. The age of students participating in the YRBS was not captured and therefore did not allow me to generalize the findings to a specific age range, but rather only to students in grades 9-12.

According to the Guidelines of Comprehensive Sexuality Education: Kindergarten through 12th Grade, sexual health education should only be taught by specially-trained teachers (FoSE, 2012; SIECUS, 2004). However, I did not seek to examine the relationship between the implementation of comprehensive sexual health education and the qualifications of the individuals responsible for teaching the approved curricula.

Limitations

This study was limited by the following factors.

- A secondary data source was used; therefore, there was no control over the development of the instrument used to collect data and the data collection processes.
- The data collected were limited to students who were in attendance at school during the timeframe in which the survey was administered and, therefore, not representative of all persons in the high school age group.
- The data collected were representative of all CPS high schools and did not allow for the comparison of prevalence rates by school or geographic location within

CPS. Thus, the differences in curriculums utilized for the instruction of sexual health education may have inadvertently influenced the relationship between the implementation of sexual health education programs and the sexual risk behaviors of high school youth in grades 9–12.

- The sexual health education policy was enacted in 2008; however, it does not take into account the availability of professional development to provide guidance on how to teach comprehensive sexual health education.
- The lack of a specified mandated sexual health education curriculum may have inadvertently influenced the relationship between implementation of sexual health education programs and the sexual risk behaviors of youth in grades 9–12.
- The policy may have been subject to the interpretation of the school administrator (e.g., principal) responsible for approving the curricula.

Significance

This study, contributed to the body of knowledge related to the influence of comprehensive school-based sexual health education on the sexual risk behaviors of Chicago high school youth in grades 9–12. Further, this study allowed for a comparison of the sexual risk behaviors before and after the 2008 enactment of CPS' comprehensive sexual health education policy, using data from the YRBS. My analyses of these data were intended to further inform future sexual health education policy initiatives at the state and local levels. Additionally, I intend for the findings from this study to be used to inform CPS' expansion of its sexual health education policy, effective in 2016, and to

assist lawmakers with crafting public policy to support the standardization of comprehensive sexual health education.

Summary

In this chapter, I provided a brief introduction to comprehensive sexual health education and focused on the purpose and intent of this study. A complete understanding of comprehensive sexual health education is needed to better ascertain the relevance and importance behind this study. In Chapter 2, I discuss the vast amounts of research and literature associated with the evolution of comprehensive sexual health education in the United States, the state of Illinois, and the city of Chicago.

Chapter 2: Literature Review

Introduction

High school youth in grades 9–12 who are in public schools without comprehensive sexual health education are more likely to engage in high-risk sexual behaviors and have higher rates of HIV and STDs than their peers in schools with comprehensive sexual health education. The purpose of this correlational study was to explore the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. I analyzed sexual risk behavior data obtained from CPS' YRBS administered between 2007 and 2013.

In my review of the literature, I found vast amounts of literature that indicate comprehensive sexual health education: (a) helps students postpone sexual intercourse, (b) reduces their number of sexual partners, and (c) helps students who are sexually active choose protection more consistently. The literature shows that these outcomes are especially evident when sexual health education is delivered by trained professionals, age-appropriate, and inclusive of accurate information on HIV and STDs, teen pregnancy, and establishing strong relationships (FoSE, 2012; CDC, 2012d; Boonstra, 2010b, Kirby, 2007). I also reviewed literature on abstinence-only sexual health education. I found that most of the abstinence-only sexual health education programs were devoid of sexual and reproductive health information, particularly regarding birth control and safer sex alternatives (Ochiogu, Miettole, Ilika, & Vaskilampi, 2011; Jemmott, Jemmott, & Fong, 2010). While the bulk of literature for abstinence only

programs supported the federal government's definition of abstinence-only education, a study conducted by Jemmott, Jemmott, and Fong (2010) was unique, in that, the focus was on the efficacy of theory-based interventions, and did not discuss sex in a negative light, emphasized the morality of engaging in sex before marriage, and did not discourage the use of condoms. Access to comprehensive sexual health education that addresses the socio-cultural, biological, psychological, and spiritual dimensions of sexuality by providing information; exploring feelings, values, and attitudes; and developing communication, decision-making, and critical-thinking skills is perceived to be a right of all people, including adolescents at various ages (SIECUS, 2012).

Sexual health education is the foundation on which instruction on STDs and HIV prevention programs were built (Francis, 2009). Access to effective comprehensive sex education supports the development of well-rounded, balanced, and sexually healthy youth (SIECCAN, 2009). Most states have a policy requiring HIV education as a complement to a broader comprehensive sexual health education program (Guttmacher, 2016). However, according to FoSE (2012), for the states without sexual health education policies, there are clear guidelines and standards to assist schools, in the design and development of sexual health education programs as a part of a comprehensive school health education approach.

Sexual health education was initially implemented to counter misinformation that was circulated throughout society, but has evolved into a field of necessity and a shared responsibility of state and local government, parents, teachers, the community, and school administrators (Corngold, 2010; SIECCAN, 2009). Sex education provides young people with necessary information to make informed choices regarding their sexual

health (SIECUS, 2012; FoSE, 2012). Sexual health education evokes emotional responses that are representative of what sexual health education means to people with differing philosophical, cultural, political, and religious views and beliefs (Bleakley, Hennessy, & Fishbein, 2010; SIECCAN, 2009). Literature related to sexual health education was overwhelmingly abundant, and literature regarding school administrators' perceived barriers to implementing sexual health education was available in abundance. However, the degree to which the consistent implementation of sexual health education programs influence sexual risk behaviors of youth, more specifically Chicago youth, in grades 9–12, before and after the enactment of sexual health education policy, was limited.

I have organized this review of research relevant to comprehensive sexual health education and the associated national and state policies into following topic areas: (a) a description of the literature search strategy employed, (b) the theoretical foundation of the study, (c) a review of literature related to key variables and concepts, and (d) a summary and conclusion of the literature I discuss in this chapter. Looking at sexual health education programs and the associated national and state policies from a broader context, and then moving to a specific focus on the city of Chicago and mandates for sexual health education in public schools or the lack thereof, allowed me a greater appreciation and understanding of the evolution of sexual health education and the critical need for standardized statewide policy that supports the development and implementation of such programs.

Literature Search Strategy

I obtained literature relevant to sex education and associated national and state policies from the CDC's online publication journal databases, Walden University's online library publication journal databases, and hard copy journals (e.g., *American Journal of Public Health, Eta Sigma Gamman*). More specifically, I used the following library databases and search engines: Political Science Complete, ProQuest Central, Academic Search Complete, Google Scholar, EBSCO, PubMed, Science Direct, Sage Journals, CINAHL, PsychInfo, Social Science Research Network, and PLOS ONE. For the searches, I used the following keywords and terms to identify relevant literature: *sexual health education in schools, sex education in schools, comprehensive sex education, Illinois and sex education, school administrators and sex education, sex education policy, perspectives on sex education, stakeholders' perspectives on sex education; abstinence-only education; abstinence-plus education, Illinois school health policy, healthy public policy, Illinois sex education legislation, youth and sex education, sex education surveys, sex education in the U.S., theory based sex education, sex education programs that work, evaluation of sex education, support of sex education, Sexual Information and Education Council of the United States. (SIECUS), comprehensive school health education, teen pregnancy rates, opinions on sex education, school health policy, salutogenic model, salutogenesis, health promotion theory,* and *healthy public policy*.

In its current status as a well-rounded discipline, sexual health education has evolved from a rich history of educational and health policy research. Therefore, I limited my initial literature search to materials published in 2000 or after, the majority of which

referenced research conducted by Dr. Doug Kirby in 2007 and the Kaiser Family Foundation, in collaboration with National Public Radio, in 2000 and 2004. However, I focused my primary literature search on publications from 2009-2016. Peer reviewed, scholarly journals were the primary sources I used as literature to support this study. Sexual health education has garnered mention by national organizations and philanthropic organizations that develop and publish standardized policies, guidelines, and recommendations related to sexual health policy, and that track, analyze, and summarize sexual health education policies and programs. Therefore, I also accessed data and literature from these organizations to further diversify the literature review. Examples of these organizations include the United States Congress reports, the CDC, Kaiser Family Foundation, SIECUS, SIECCAN, FoSE, and the Guttmacher Institute.

Theoretical Foundation

Comprehensive sexual health education is rooted in research, and is associated with the core elements of several theoretical frameworks. For this study, the salutogenic model/theoretical framework served as the foundation for my exploration of the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. The salutogenic model, based on the premise of salutogenesis, was introduced in 1979 by Aaron Antonovsky. Salutogenesis is the study of health development in general, and more specifically is focused on creating, enhancing, and improving physical, mental, and social well-being (Becker, Glascoff, & Felts, 2010).

The salutogenic model was introduced as an alternative to the pathogenic model, a model that widely dominated the field of public health (Anderson, Moore, Hayden, & Becker, 2014; Garcia-Maya, Rivera, Moreno, Lindstrom, & Jiminez-Igelsias, 2012). Pathogenesis is the study of disease development, and more precisely the avoidance, management, and/or elimination of disease, whereas researchers use the salutogenic model to explore the origin of health while focusing on creating health instead of disease (Lindstrom & Eriksson, 2009). Researchers use the salutogenic model to study the strengths and weaknesses of disease prevention, health promotion, and the development of practices and healthy public policies, as described in the Ottawa Charter of 1986 (Nutbeam, 2008; Antonovsky, 1996).

Comprehensive sexual health education is rooted in the foundational construct of the salutogenic model. The correlation between positive health outcomes at the individual (high school youth), organizational (schools), and population (state and local policy) levels emphasizes the importance of a structured environment and people are encouraged to identify and use the resources available to them to promote the health of the individual, community, and the nation (Mittlemark & Bull, 2013; Lindstrom & Eriksson, 2009). Youth are a product of, and deeply influenced by, their environments (Stranger-Hall & Hall, 2011). The salutogenic model takes the concept of health promotion as the foundation, and intertwines the sense of coherence and the availability of internal and external resources (generalized resistance resources) to help individuals, organizations, and society move toward optimal well-being (Mittlemark & Bull, 2013; Becker, Glascoff,

& Felts, 2010), the overall goal of comprehensive sexual health education (SIECUS, 2012).

Lindstrom and Eriksson (2009) have noted that "public health has taken on the challenge to establish co-operation between different sectors in society" to make health an issue for society as a whole (p. 17). Comprehensive sexual health education is a shared responsibility of government, parents, communities, school administrators, and teachers that requires the attention of all entities to support the development of sexually healthy youth (Corngold, 2010; SIECCAN, 2009). The salutogenic model can be used as a foundation for healthy public policy that merges together the spectrum of risk factors, protective factors, and promotion factors into a holistic model focused on proactivity versus reactivity (Lindstrom & Eriksson, 2009). The emphasis is on health promotion, which ignites control of personal health and the determinants of health, thereby contributing to overall quality of life (Bengt & Eriksson, 2009).

The salutogenic model has been used as the framework for several policies and health studies. The Ottawa Charter of 1986, drafted at a World Health Organization meeting, is based on the premise of creating healthy public policy, environments that support health and strengthen community actions, the development of personal skills, and the reorientation of health challenges (Nutbeam, 2008). Creation of healthy public policy is based on two frameworks: the salutogenic model and a contextual quality of life model. Hence, the salutogenic model has been the basis of research in promotion of positive health (Anderson, Moore, Hayden, & Becker, 2013). Researchers have used the Salutogenic Wellness Promotion Scale (SWPS) to examine the interpersonal beliefs and

behaviors that contribute to positive health based on physical, social, emotional, intellectual, vocational, spiritual, and environmental factors (Anderson, Moore, Hayden, & Becker, 2013). Similarly, Durlak, Weissberg, Dymnicki, Taylor, and Schellinger (2011) have shown that there is an overlap in the factors that influence the support and implementation of comprehensive sexual health education. Anderson, Moore, Hayden, and Becker (2013) found that SWPS was a reliable measure for positive health, and showed how the salutogenic model can be used as foundation for a healthy public policy that drives the development of health promotion programs designed to promote positive health, growth, and development--the basis for comprehensive sexual health education.

Literature Review Related to Key Variables and/or Concepts

Statistics on Adolescent Sexual Behavior in the United States

According to the CDC (2015a), at the end of 2012, an estimated 1.2 million persons aged 13 years and older were living with HIV infection, 14% had undiagnosed HIV infection. Over the past decade, the number of people living with HIV has increased, while the number of new HIV infections remained relatively stable, with approximately 50,000 new infections, annually. However, the number of new HIV infections continues to increase among certain groups, such as African-Americans, Latinos/Hispanics, and youth. According to the CDC (2014a), youth aged 13–24 made up 17% of the U.S. population, but accounted for an estimated 26% of all new HIV infections in the United States in 2010; approximately 60% of youth with HIV in the United States did not know they are infected.

In 2012, CDC estimated that young people aged 15–24 years represented only 25% of the sexually experienced population; however, they accounted for nearly half of

all new STDs. Sexually active adolescents aged 15–19 years and young adults aged 20–24 years are at higher risk of acquiring STDs for a combination of behavioral, biological, and cultural reasons when compared to older adults. Teenage pregnancy and STDs, including HIV, are major problems in the United States (CDC, 2012b; CDC, 2012d).

Comprehensive sexual health education and access to contraception are important to the overall health of youth throughout the United States (U.S. Congress, 2011; Corngold, 2010). According to Advocates for Youth (2014), the majority of adolescents become sexually active during their teenage years. According to data obtained from the CDC's national YRBS data (2016), among U.S. high school students surveyed in 2015, 41% of the students indicated they had sexual intercourse at least once in their life and 30% had sexual intercourse during the previous three months. Of the high school students who had sex during the previous three months, 43% did not use a condom the last time they had sex; 14 % did not use any method to prevent pregnancy; and 21% drank alcohol or used drugs before their last sexual intercourse. Comprehensive sexual health education reflective of a balanced approach is a critical tool necessary to support healthy sexuality throughout the lives of adolescents (Fonner, Armstrong, Kennedy, O'Reilly, and Sweat, 2014; and Stranger-Hall and Hall, 2011).

Effective communication and the implementation of comprehensive sexual health education programs result in youth being more likely to practice contraception without interruption over the course of a year and are more likely to practice sporadic use of contraception (Guttmacher, 2016).

The first efforts to standardize comprehensive sexual health education in schools were initiated in 1990. A group of leading educators, health professionals, and

representatives from national organizations who focused on adolescent development, education, and sexuality were brought together to convene the first National Guidelines Task Force. To further define and guide the development of sexual health education programs, the Task Force developed the Guidelines of Comprehensive Sexuality Education: Kindergarten through 12th Grade. These Guidelines were first published in 1991 and subsequently revised in in 1995 and 2004.

The Guidelines provided a framework for the development of new comprehensive sexual health education programs and evaluation of existing curricula for teachers, politicians, and administrators implementing new or restructuring existing sexual health education programs. The Guidelines are based on the premise that: (a) sexual health education should be offered as a part of an overall comprehensive health education program; (b) sexual health education should only be taught by specially trained teachers; (c) the community must be involved in the development and implementation of the program; (d) all children and youth, regardless of gender, ethnicity, community and disability will benefit from comprehensive sexual health education; and (e) the three learning domains, cognitive, affective, and behavioral, should be addressed in all sexual health education programs (FoSE, 2012; SIECUS, 2004).

Subsequently, the FoSE Initiative, a partnership between key proponent groups for comprehensive sexual health education was launched to promote the institutionalization of comprehensive sex education in public schools (FoSE, 2012). The manner in which sexual health education was implemented varied dependent on the interpretation of state or local laws governing sexual health education, personal perspectives of school administrators, etc. (Fornby et al., 2010). FoSE developed the

National Sexual Health Education Standards: Core Content and Skills, K-12 as a complement to the Guidelines of Comprehensive Sexual health education. The National Sexual Health Education Standards provided clear and consistent guidance on the minimum core content that should be included in schools throughout the United States. The seven topics identified as the minimum, essential content and skills for grades K-12 sexual health education included: (a) anatomy and physiology, (b) puberty and adolescent development, (c) identity, (d) pregnancy and reproduction, (e) sexually transmitted diseases and HIV, (f) healthy relationships, and (g) personal safety (FoSE, 2012).

My research focused on the correlation between the consistent implementation of comprehensive sexual health education in Chicago and the sexual risk behaviors of high school youth in grades 9 – 12. As discussed throughout this section, there were an abundance of frameworks and guidance available to support the implementation of comprehensive sexual health education programs. However, the availability of such resources and the inconsistency in which comprehensive sexual health education is delivered points to a larger issue, the perceived barriers to the implementation of comprehensive sexual health education programs.

The History and Evolution of Sex Education in the United States

Sexual health education has evolved from prohibiting any form of sexual expression; the Comstock Laws prohibited the mailing of information or advertisements about sexuality, including information on contraception or abortion (McCracken, 2010). However, sexual health education has been and continues to be shrouded with controversy.

Before the twentieth century, sexual health education was comprised of personal observations and informal discussions. There were few resources that discussed or provided basic information about sexual activity. The modern movement to place sexual health education in public schools grew out of a broader Progressive Era in opposition to prostitution and venereal diseases, but supportive of the viewpoint that the purpose of sex was procreation. This movement was called the social-hygiene movement (Carter, 2001; APHA, 1913).

Two questions remained at the forefront of the social hygiene movement: (a) should sex hygiene be taught in the public schools and (b) what could be done to suppress prostitution, the initial basis for initiating the teaching of sex hygiene. In response, the American Social Hygiene Association (ASHA) initiated the push for sexual health education (APHA, 1913). ASHA argued that sexual health education was essential to dispel ignorance about sex, disease, and the immorality that made prostitution and other misbehaviors possible (APHA, 1913); likely resulting in abstinence-only education. While this approach led to the delivery of sex education, the argument weakened the potential for future approaches.

In 1924 the United States Public Health Service (USPHS) produced *The Science of Life,* which consisted of two sexual health education films for adolescents, *Personal Hygiene for Boys* and *Personal Hygiene for Girls* (Lord, 2004). Although, the USPHS was not able to require school districts to show these films, the films were shown in many classrooms until the 1930s. A shift in the focus of sexual health education occurred in the 1940s as a result of Surgeon General Thomas Parran's view that "most

of us are now agreed that some kind of sexual health education is necessary" (Parran, 1940); this shift encouraged healthy sexuality for family life.

In 1964 SIECUS was founded; created to challenge the dominating influence of the American Social Hygiene Association on the development of sex-education curricula. More importantly, SIECUS sought to actively promote sexuality as a natural and healthy part of life (SIECUS, 2012). SIECUS leaders supported teaching sexuality in a value-neutral manner that allowed students to reach their own conclusion about sexual behavior and sexual morality (SIECUS, 2004).

The 1980s were characterized by the AIDS epidemic and the height of sexual freedom and expression. In response to the AIDS epidemic in the United States, Surgeon General C. Everett Koop issued a report calling for comprehensive AIDS and sexual health education in public schools, starting as early as the third grade (Galson, 2008). When conservative opponents in the United States realized that sexual health education was going to be taught, they initiated a movement to replace sexual health education with abstinence education (National Library of Medicine, n.d.). Religious conservatives worked to add provisions for abstinence education to the 1996 Welfare Reform Act. Hence, the federal government began allocating millions of dollars to support abstinence education programs (Jones, 2011). This time period resulted in a retreat from the comprehensive approach to sexual health education and was replaced with emphasis on abstinence education, an authoritative approach that emphasized conservative views on abstaining from sex until marriage (Jones, 2011).

Effective programs are determined by the key components of the program which serve as a blueprint for the implementation. Kirby (2007; 2002) conducted two separate

evaluation studies to determine the characteristics shared by effective sexual health education programs. The findings resulted in the development of criteria for assessing the effectiveness of sexual health education programs. The findings also indicated that effective sexual health education programs should: (a) focus on reducing one or more sexual risk behaviors that lead to unintended pregnancy or HIV/STD infection, (b) provide a basis on theoretical approaches to modifying social behavior, (c) provide a clear message by reinforcing a clear stance on certain behaviors, (d) provide basic and accurate information about the risk of unprotected intercourse and methods of avoiding unprotected intercourse, (e) address social pressures on sexual behavior, (f) model and practice communication, negotiation, and refusal skills, (g) employ a variety of teaching methods, (h) incorporate goals, teaching methods, and materials appropriate to the students, (i) last a sufficient length of time, and (j) provide training for teachers and peer educators.

Abstinence-only programs promote abstinence from all sexual activity as the preferred choice for adolescents and those that are not married. Whereas, comprehensive sexual health education programs teach abstinence as the first choice, but also provide information on ways to prevent pregnancy such as the use of contraceptives (FoSE, 2012). According to Corngold (2011) proponents of abstinence-only education support the focus on “chastity as the correct way of life for all unmarried persons” (p. 79). Whereas, advocates of comprehensive sexual health education agreed that abstinence should be stressed as a smart and healthy choice; this messaging should be complimented with medically accurate, age appropriate, and complete information about contraception,

reproduction, STDs and HIV (SIECUS, 2012; Boonstra, 2012; Corngold, 2011; Kirby, 2008).

Despite the availability of research and evidenced based findings on the most effective form of sexual health education, the debate regarding school based sexual health education at the national, state, and local government level has continued (Corngold, 2012; Corngold, 2010; Jemmott, Jemmott, & Fong, 2010). Scientific consensus has not been reached in relation to the implementation of comprehensive sexual health education versus abstinence-only education. More specifically, although state policies and regulations vary greatly with regard to whether sexual health education should be provided and the content that should be included, research on the impact of state policies on sexual health outcomes for youth is scarce (Atkins and Bradford, 2014; Sabia, 2006). Thus, my research discusses several research studies focused on the relationship between sexual health education and youth sexual risk behaviors and the science in support of and opposition to comprehensive sexual health education. There was minimal research available that studied the correlation between state level sexual health education policies and the sexual risk behaviors of youth.

As previously discussed, very few studies linking state policies and sexual health outcomes have been conducted. However, three studies attempted to evaluate the correlation between state policies and the sexual health outcomes of youth. A study conducted by Atkins and Bradford (2013) utilized YRBS data for 39 states to estimate the impact of state level sex education policies. Demographic data of the students was used to examine the relationship between sexual health education and sexual risk behaviors of

youth. This study showed that states that required sexual health education and contraceptive content or states that mandated sexual health education but left the content to the discretion of the local school districts had higher rates of contraception use among teens that were sexually active. The aforementioned study provides a foundation for my research described in Chapter 3.

Hogben, Chesson, and Aral (2010) linked the impact of abstinence only program requirements mandated by state policy to STD rates in the United States. Specifically, utilizing gonorrhea and chlamydia data, the researchers found that states with mandated abstinence only education had higher rates of STDs than states without an abstinence only education mandate. Cavazos-Rehg et al. (2012) conducted a study to examine the relationship between state level teen birth rates and 13 measures of average state classroom coverage of sexual health education topics. The researchers found minimal consistent evidence of the average educational effects on teen fertility. Conversely, researchers relied on a bi-annual survey of school health educators to determine whether students received lessons on specific topics that did not characterize the state policies versus analyzing the actual state policies.

The beginning of the 20th century marked the birth of the sexual health education debate throughout the United States, focusing on two main issues. The first issue being debated was whether school based sexual health education should be taught. The second was the type of school based sexual health education that should be taught, abstinence-only or abstinence-plus also known as comprehensive sexual health education. A study conducted by Stranger-Hall and Hall (2011) showed that increased emphasis on

abstinence education was positively correlated with teenage pregnancy and birth rates. Furthermore, this study utilized state data on youth sexual risk behaviors and sexual activity (i.e., teenage pregnancy rates, abortion rates, and birth data) in conjunction with information on each state's sex education policy to quantify evidence related to the effectiveness of abstinence-only sexual health education. The researchers conducted a multivariate analyses of the dependent variables; the independent variable being abstinence only education. Findings from this study indicated that the more state laws and policies emphasized abstinence only education, the higher the average teenage pregnancy and birth rate were. Whereas, states that taught comprehensive sex and/or HIV education tended to have the lowest teen pregnancy rates.

The argument surrounding abstinence-only versus abstinence-plus education is rooted in politics and is a health topic at the mercy of the current political environment (Corngold 2010). A study originally conducted by Durlak and DuPre (2008) and later discussed by Durlak, Weissberg, Dymnicki, Taylor and Schellinger (2011) sought to assess the impact of implementation on program outcomes and identify factors that affect the implementation process. The study showed that there are various factors that influence implementation, the researchers divided these factors into five categories: (a) characteristics of innovations, (b) individuals, (c) communities, (d) features associated with prevention delivery, and (e) features associated with support systems. The sexual health education debate is driven by perceptions, beliefs, and expertise of individuals and communities of people (e.g., educators, administrators, politicians, etc.). The effectiveness of sexual health education is dependent upon the mode of implementation

and the system in place to support the implementation. Thus, the shared responsibility of decision-making by parents, teachers, administrators, and politicians enhances the implementation of sexual health education and helps resolve potential challenges (Benzaken, Palep, and Gill, 2011). However, this shared responsibility has not resulted in a democratic decision making process focused on the health needs of youth, but rather the ideals of what is believed to be most appropriate by those with decision making authority (Marples, 2014).

Abstinence-only Sexual Health Education

The decrease in support for sex education in schools fueled the shift to what became known as abstinence-only sex education (Boonstra, 2009). Authentic abstinence programs are described as utilizing a more holistic approach to human sexuality and being concerned with the social and psychological aspects of sex (Bailey, 2014). Bailey (2014) believed that authentic abstinence curricula place a major emphasis on love, intimacy, and commitment. These curricula teach youth that personal happiness, love, and intimacy are most likely to occur within the commitment of a faithful marriage and that abstinence is a solution to the problems of pregnancy, STDs and emotional harm.

Abstinence-only education generally emphasizes abstinence from sex to the exclusion of all other types of sexual and reproductive health education, particularly regarding birth control and safe sex (Boonstra 2014; Kirby, 2008). This type of sexual health education promotes sexual abstinence until marriage and either has completely avoided any discussion about the use of contraceptives or has focused on the failure rates associated with use of contraception (Guttmacher Institute, 2016; FoSE, 2012: Oster

2008; Kirby 2008). Furthermore, advocates for abstinence only programs have argued that controversial topics associated with sex education, such as contraception, sexual orientation, etc. send mixed messages, thereby creating questions regarding expectations of students (Jones, 2011; Oster; 2008).

Abstinence-plus Sexual Health Education (Comprehensive Sexual Health Education)

Abstinence-plus sexual health education (also known as comprehensive sexual health education) teaches about abstinence as the best method for avoiding STDs and unintended pregnancy, while also including instruction about condoms and contraception to reduce the risk of unintended pregnancy and contracting of STDs and/or HIV (Helmich, 2009; Advocates for Youth, 2008b). Furthermore, comprehensive sexual health education also teaches interpersonal and communication skills and helps young people explore their own values, goals, and options.

The argument in support of and in opposition to comprehensive sexual health is ongoing and is interpreted by some as sending mixed messaged to students. This is an argument that has been seemingly supported by the actions of the United States federal government. According to Stranger-Hall and Stranger (2011), the federal government's support of two different types of sexual health education programs has allowed state legislators to choose the type of sex education that will be implemented in their states.

The federal government has provided funding for abstinence-only sexual programs since 1981 despite the lack of research showing the effectiveness of such programs. (Boonstra, 2010a) There were three federal programs, of significance, that

supported abstinence-only programs, the Adolescent Family Life Act (AFLA), Community Based Abstinence Education, originally known as Special Projects of Regional and National Significance – Community-Based Abstinence Education (SPRANS-CBAE), and Title V – Welfare Reform Act.

Adolescent Family Life Act (AFLA). In 1981, the Adolescent Family Life Act (AFLA) also known as the "Chastity Act" was signed into law as Title X of the Public Health Service Act. The enactment of AFLA represented the first time the federal government invested in teen pregnancy prevention programs that specifically focused on self-discipline and chastity, while denying funding for abortion (Jones, 2011; Oster, 2008). The AFLA provided funding for two basic types of demonstration projects: (a) prevention demonstration projects to develop, test, and use curricula that provided education and activities designed to encourage adolescents to postpone sexual activity until marriage; and (b) care demonstration projects to develop interventions with pregnant and parenting teens, their infants, male partners, and family members in an effort to reduce the effects of too-early-childbearing for teen parents, their babies, and their families (Jones, 2011; Oster, 2008).

Title V – Social Security Act (Welfare Reform Legislation). The Temporary Assistance for Needy Families Act (TANF), was signed into law in 1996 (Social Security Act, 42 U.S.C. § 710. Pub. L. No. 104-193 (1996). This added Title V, Section 510(b) of the Social Security Act to the list of funding for abstinence-only sexual health education. The Title V abstinence-only program allocated money to the state Mother and Child Health Bureaus to support the implementation of abstinence only until marriage programs. The abstinence-only provision in Title V allowed funding of schools that

implemented abstinence-only sex education programs in direct alignment with the eight point federal definition of abstinence education. Abstinence education was defined as an educational or motivational program that:

- Has as its exclusive purpose teaching the social, psychological, and health gains to be realized by abstaining from sexual activity.
- Teaches abstinence from sexual activity outside marriage as the expected standard for all school-age children.
- Teaches that abstinence from sexual activity is the only certain way to avoid out of wedlock pregnancy, sexually transmitted diseases, and other associated health problems.
- Teaches that a mutually faithful, monogamous relationship in the context of marriage is the expected standard of sexual activity.
- Teaches that sexual activity outside the context of marriage is likely to have harmful psychological and physical effects.
- Teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents, and society.
- Teaches young people how to reject sexual advances and how alcohol and drug use increases vulnerability to sexual advances.
- Teaches the importance of attaining self-sufficiency before engaging in sexual activity (Canders, 2012; SIECUS, 2010; Advocates for Youth, 2008a).

On June 30, 2009, the Title V abstinence-only until marriage program, as originally written, was allowed to expire. By the time the program expired, nearly half of

the states were no longer participating in this program (Boonstra, 2012; SIECUS, 2010; Jones, 2011; Oster, 2008). Title V was amended to allow states to decide where to place emphasis on each of the eight points associated with abstinence education (Boonstra, 2010a). Of the states that refused the money, 80% did so based on research that showed abstinence-only-until-marriage programs were ineffective (Boonstra, 2010a; Oster, 2008; SIECUS, 2008).

The Special Projects of Regional and National Significance. The Special Projects of Regional and National Significance—Community-Based Abstinence Education (SPRANS-CBAE) were created in October 2000 as the third iteration of abstinence-only funding approved by Congress. Under this funding, awards were granted directly to community based organizations implementing abstinence-based education programs (Canders, 2012) that adhered to the eight-point definition. These funds were more restrictive than Title V, in that the funding required recipients of the funds to: (a) implement programs that targeted adolescents between ages 12 through 18; (b) be responsive to each of the eight points, rather than determining which points to place relative emphasis; and (c) not provide adolescents with positive information about contraception or safer-sex practices, regardless of the parameters associated with other funding sources (Canders, 2012).

Teen Pregnancy Prevention Initiative. In December 2009, legislation approved by Congress and signed into law by President Obama provided funding to support the Teen Pregnancy Prevention Initiative. This initiative allocated $114.5 million to support the development and implementation of evidence-based programs and innovative models to prevent teen pregnancy and STDs, including HIV (Stranger-Hall & Hall, 2011;

Boonstra, 2010b). The enactment of this initiative galvanized many organizations and advocacy groups to continue the fight to include comprehensive sexual health education in public schools.

In an attempt to advance the science associated with sexual health education, several studies have been conducted to analyze the effectiveness and efficacy of abstinence only and comprehensive sexual health education programs. Kirby (2007) conducted what has been considered to be one of the most significant and comprehensive studies in the field of sexual health. In his review of 115 sexual health education programs, Kirby (2007) suggested that sex education programs do not hasten the onset of sex, increase the frequency of sex, or increase the number of sex partners. In fact, results from the review showed the opposite. Findings from the review scientifically supported research findings and evidenced a delay in the initiation of sex, the number of sexual partners, and increases the use of condoms during sexual intercourse (Advocates for Youth, 2012; FoSE, 2012; CDC, 2009; Kirby, 2007).

Comparatively, according to Rector (2002), ten effective abstinence programs were scientifically evaluated and found to reduce sexual activity among young people. These programs were evaluated as "real abstinence programs" that did not provide contraceptives or encourage the use of contraceptives. Findings from the evaluation of these programs showed reductions in sexual activity, although the statistical significance was slightly below the 95% confidence level; five of the evaluations were never published in scholarly journals (Young & Penhallow, 2006). When implemented in conjunction with other programs, these programs offered evidence reinforcing the case for overall effectiveness of abstinence education, as reported by the researcher. While

this study was used as a benchmark for the evaluation of abstinence only programs, the findings indicated that abstinence only programs are not effective, on their own, in promoting abstinence.

The above study was subsequently followed by a second study conducted by Kim and Rector (2008) focused on confirming the authenticity of the type of sex education program rather than the effectiveness of the program. The researchers reviewed 21 abstinence education programs Findings from the review presented 15 of the programs as authentic abstinence programs; 11 of them reported positive findings. The other six studies analyzed virginity pledges; five out of the six reported positive findings. The researchers noted positive results, such as, delayed sexual initiation and reduced levels of early sexual activity.

A study for Mathematica conducted by Trenholm, Devaney, Fortson, Clark, Quay and Wheeler (2008), examined the impact of four abstinence-only education programs on adolescent sexual activity. The impact analysis used survey data previously collected from more than 2,000 teens who were randomly assigned to a program group. The findings from this study showed no significant impact on teen sexual activity or differences in rates of unprotected sex. The findings also showed some impact on the teens' knowledge of STDs and perceived effectiveness of condoms and birth control pills. Trenholm et al (2008) found that youth in the program group were no more likely than those in the control group to have abstained from sex. Findings from the study also indicated that youth in the program group who had engaged in sex, had similar numbers of sexual partners as those in the control group. Additionally, youth in the program

group were no more likely to have unprotected sex than youth in the control group (Kirby; 2008; Trenholm, et al, 2008; Trenholm et al, 2007).

In response to the Mathematica study (2008), Kim and Rector (2008) stated that surveying students four to six years after initial program enrollment was too long a span of time to evaluate the programs. The researchers suggested that follow-up intervals usually range from 12 to 48 months after the program for long term impact studies. Kim and Rector (2008) quoted the Mathematica researchers as saying "given the smaller sample sizes available for estimate impact as the site level…the study cannot rule out modest site-specific impacts on these outcomes" (Trenholm et al., 2008).

The belief that sexual health education increases sexual risk behaviors has been studied and reported otherwise (SIECUS, 2012; Boonstra, 2012; Corngold, 2011; Kirby, 2008; Trenholm et al, 2008; Kirby, 2007). Evaluations of sexual health education programs have strongly supported the conclusion that sexual health education curricula do not increase sexual intercourse by hastening the onset of intercourse, increasing the frequency, or increasing the number of sexual partners (FoSE, 2012; Boonstra, 2010).

Kohler, Manhart, and Lafferty (2008) studied the national Survey of Family Growth to determine the impact of sexual health education on youth sexual risk-taking for adolescents ages 15-19. The researchers performed a comparative analysis of the sexual health risks of youth that received abstinence-only versus those that received abstinence-plus education or no formal sexual health education was conducted. The researchers found that the teens that received abstinence-plus education were 50% less likely to become pregnant than those who received abstinence-only education or no sexual health education. The findings from this research support existing literature,

indicating abstinence-only programs have a minimal effect on reducing, sexual risk behavior (Advocates for Youth, 2012; CDC, 2009; Goldman, 2010; Hemlich, 2009).

CDC's Community Preventive Services Task Force is an independent, nonfederal body comprised of public health and prevention experts appointed by the Director of the CDC to oversee the prioritization processes for systematic reviews; participate in the development and refinement of review methods; serve as members of review teams; and consider findings of all reviews and issue recommendations and findings to help inform decision making regarding policy, practice, research, and research funding (CDC, 2012a). A review of 62 Comprehensive Risk Reduction (CRR) reduction interventions conducted by the Task Force (2009) showed that the most effective programs to promote behaviors that reduce risk of becoming pregnant and preventing STDs and HIV are comprehensive programs that include a focus on delaying sexual behavior and provide information on how sexually active adolescents can protect themselves. Based on the systematic review of available CRR interventions implemented in schools or community settings with groups of adolescents aged 10-19, the Task Force recommended the implementation of group-based CCR interventions for adolescents to promote healthy and safer sexual risk behaviors. The CCR interventions were found to have sufficient evidence in reducing a number of self-reported risk behaviors, including: (a) engagement in any sexual activity, (b) frequency of sexual activity, (c) number of partners, (d) frequency of unprotected sexual activity, (e) increase in self-reported use of protection against pregnancy and STDs, and (f) reduction in the incidence of self-reported or clinically-documented STDs.

While the above studies are dated, the findings are consistent with other studies that evaluated abstinence only sexual health education programs. Specifically, the

research for the abstinence plus programs seemed to be more conclusive in the reports of effectiveness. In recent years, researchers have focused on analyzing state sex education policies in direct correlation with sexual risk behaviors of youth by conducting meta-analyses of abstinence only and abstinence plus programs, and assessing the perceptions of students.

Moreover and as previously discussed, Stranger-Hall and Hall, (2011) in an attempt to respond to the controversy surrounding sexual health education programs, analyzed national data from all U.S. states with information on sex education laws or policies. The assumption was that the effectiveness of abstinence-only programs would directly correlate to the sexual risk behaviors of the youth in the states. However, the data showed that the incidence of teenage pregnancies and births were positively correlated with the degree of abstinence education. The findings of this study identified a direct correlation between states with abstinence based programs and the incidence of teenage pregnancies and births. However, there were underlying factors, as recognized by the researchers, which may have also influenced the findings, such as household income, race demographics of the community, etc.

A study on the efficacy of theory based abstinence only interventions by Jemmott, Jemmott, and Fong (2010) showed that these interventions may have a role in preventing adolescent sexual activity. A strength of this study was that few randomized control trials tested the efficacy of abstinence interventions; thereby, enhancing the contributions to the literature. However, the interventions included in the study did not adhere to the federal governments definition of an abstinence only program, thereby

interjecting questions regarding the evaluation of these programs as abstinence-based versus abstinence plus.

In summary, Young and Penhollow (2006) recommended researchers: (a) examine the efficacy of existing programs in helping youth avoid sexual risk behaviors, (b) develop new theory-based interventions and test them using rigorous evaluation design, and (c) use clear measures of behavior that go beyond traditional sexual intercourse and elicit information regarding participation in other potentially risky sexual risk behaviors. Minimal evidence was found to support the claim that abstinence-only programs were effective in delaying sexual intercourse and protecting youth from unintended pregnancy, STDs, and HIV. On the contrary, comprehensive sexual health education programs have been shown to be quite effective in delaying sexual intercourse, decreasing the number of sex partners, and increasing condom use. The type of sexual health education provided is an ongoing debate at the various levels of the government (Corngold, 2011). The time has come to shift the debate about sexual health education instruction from whether and how to teach about abstinence to whether and how condoms and other methods of contraception are taught consistently in sexual health education classes (Helmich, 2009).

Comprehensive Sexual Health Education in the United States - The Present

The signing of the Affordable Care Act (ACA) into law established key processes to support comprehensive health insurance reform (U.S. Department of Health and Human Services, 2010). Comprehensive health care reform was intended to: (a) improve access to quality healthcare for all Americans; (b) increase focus on prevention,

preventive care, and access to health education; and (c) increase the responsibility of individuals to manage their healthcare (U.S. Department of Health and Human Services, 2010). Subsequently, standardization and implementation of comprehensive health education, including comprehensive sexual health education as a form of prevention complements the expansion of health care; thereby, realizing future reductions in health care cost (Milstein, Horner, & Hirsch, 2010).

As a means to encourage public schools to take responsibility for the health of their students, the CDC developed the coordinated school health program (CSHP) initiative, a strategy used to improve the health of students in public schools by providing funding to states to help schools implement broader coordinated school health (CDC, 2011). The School Health Policies and Practices Study (SHPPS) is a national survey conducted every 6 years to assess coordinated school health programs across the United States (CDC, 2012e). SHPPS was the first study that measured policies and programs at the state, district, school, and classroom levels across multiple components of CSHP. SHPPS was conducted at all levels in 1994, 2000, and 2006. The 2012 study collected data at the state and district levels only, and the 2014 study collected data at the school and classroom levels only (CDC, 2014b).

Perceived Barriers to Consistent Implementation of Comprehensive Sexual Health Education. Sexual health education has been surrounded by controversy and ongoing debate since the early 1900s (Jones, 2011). Much of controversy stemmed from the type of sexual health education, abstinence-only or comprehensive sexual health education (abstinence-plus), that was being implemented or being considered for implementation in public schools. However, with the ongoing debates and controversy

taken into consideration, the barriers to the implementation of comprehensive sexual health education have remained the same. The barriers identified in Scales (1989) were listed as future barriers; although there has been significant progress in the implementation of comprehensive sexual health education (Boonstra, 2010), the barriers listed below continue to exist in today's debate of comprehensive sexual health education (Jones, 2011; Goldman, 2010; Oster, 2008; Kirby, 2007). Barriers to the implementation of comprehensive sexual health education, include: (a) teachers' lack of knowledge of content area, (b) teachers' lack of professional development, (c) community opposition to sexual health education, (d) parents'/guardians' opposition to sexual health education, (e) teachers' comfort level with teaching sexual health education (f) involvement of politics, (g) perceptions of parents' support of sexual health education, (h) responsibility of the school, (i) responsibility of the parents' to deliver sexual health education, (j) misconceptions of what sexual health education encompasses, (k) belief that coverage of reproductive systems in biology class is adequate for sexual health education, and (l) belief that sexual health education will increase sexual risk behaviors, remain, albeit with varying degrees of impact in today's society.

Despite, an abundance of research in support of the benefits of comprehensive sexual health education, politics continue to play a key role in the discussion of comprehensive sexual health education in public schools, whether in support of or in opposition to sexual health education (Jones; 2011; Boonstra, 2010). At various times in United States history, federal and state governments have allocated significant funding to support abstinence-only and abstinence-plus programs, although fewer in number. However, currently, minimal direction beyond stressing abstinence in conjunction with

providing age appropriate and medically accurate information is provided. According to Corngold (2010) is his analysis of Gutmann's *Democratic Education*, education authority is shared among state, parents, and education professionals, but argues against Gutmann's assertion that local communities should have the freedom to decide whether or not comprehensive sexual health education is offered in their community. Thus, resulting in the inconsistent implementation of comprehensive sexual health education.

The degree of support from community stakeholders has often been dependent on the political and ideological environment in which a school resides (Brandon, Smith, Trenholm, and Devaney, 2010). Politicians have traditionally made decisions based on two ideologies: (a) their personal and moral beliefs, regardless of the availability of scientific evidence; and (b) to accommodate their political base to help them attain future political goals (Oster, 2008, p. 130). Oster (2008), explained considerations given to the decision making process of politicians as "political paradoxes caused by two primary goals of politicians, political goals and policy goals" (p. 133). Comprehensive sexual health education has been on both sides of the fence, dependent on the political climate. The CPS' Family Life and Comprehensive Sexual Health Education policy was recognized as having a comprehensive approach to sexual health education (SIECUS, 2011a). Reducing teen pregnancy and STD rates among Chicago adolescents was a cry heard, by local Chicago politicians, hence the fulfillment of their policy and political goals.

The lack of knowledge and the lack of professional development among teachers responsible for providing sexual health education programs has been a concern in the field of sexual health education (Goldman, 2010). Sexual health education should be

taught by teachers with specialized training in the area of sexual health education and include the key components of a sexual health education program, as outlined previously (FoSE 2012; SIECANN, 2009,). Often times, physical education teachers or coaches of athletic teams, with no formal training, have been given the responsibility of teaching sexual health education. These teachers too often do not have the skills, training, or inclination to teach sexual health education (Goldman, 2010). Relying on professionals who are not trained to teach adolescents this aspect of health education is detrimental to an adolescent evolving into a balanced sexually healthy adult. The sexually healthy adolescent must feel comfortable expressing their thoughts and feelings regarding their sexuality and seeking information related to human sexuality, without thoughts of shame due to their sexual feelings (Francis, 2009). Comprehensive education taught by appropriately trained educators requires a standardized theoretical approach to support the curriculum development; this approach emphasizes clear goals, objectives, learning processes, and outcomes (Goldman, 2010).

State Policies on Sexual Health Education

The federal government's role in state level sexual health education policy is limited; policies governing sexual health education in schools are made at the state and local level (Guttmacher, 2016). However, in the1980s, schools began reevaluating their sexual health education polices due to the tremendous impact of the AIDS epidemic; most states began requiring public schools to teach some form of sex or STD/HIV education (Guttmacher, 2016). The ongoing debate of abstinence only versus comprehensive sexual health education significantly influenced the degree of variance in the ways in which states have approached the development of sexual health education

policies (Corngold, 2011). Some states however, have placed requirements on how abstinence or contraception must be taught within the school district's curriculum. (Guttmacher Institute, 2016).

The Guttmacher Institute (2016) summarized the following highlights of state sex and HIV education policies.

General Requirements for Sex Education and HIV Education:

- 24 states and the District of Columbia mandate that public schools teach sexual health education.
- 33 states and the District of Columbia mandate HIV education; of these states, 13 mandate only HIV.
- 27 states and the District of Columbia mandate that, when provided, sex and HIV education programs meet certain general requirements.
- 38 states and the District of Columbia require school districts to involve parents in sex education, HIV education, or both.

Content requirements when sex education is taught:

- 18 states and District of Columbia require that information on contraception be provided.
- 37 require that information be provided; 26 states require that abstinence be stressed.
- 19 states require that instruction on the importance of engaging in sexual activity only with marriage be provided.
- 13 states require discussion of sexual orientation.

- 13 states require the inclusion of information on the negative outcomes of teen sex and pregnancy.
- 28 states and District of Columbia require the provision of information about skills for healthy sexuality, healthy decision making and family communication skills.

The inconsistent implementation of comprehensive sexual health education is not unique to a state, but rather spans across the United States.

Sexual Health Education in Illinois

The Guttmacher Institute (2016) noted, "concerns over AIDS and teen pregnancy galvanized widespread public support for sexual health education in schools". However, the state of Illinois does not mandate sex education or HIV education; if sex education is taught in Illinois, it must stress abstinence and be age appropriate. According to CDC (2015d), Illinois ranked 8th among the 50 states in the number of HIV diagnoses; an estimated 2,077 adults and adolescents were diagnosed with HIV in 2013. Additionally, in 2013, Illinois ranked 12th in chlamydial infections and 13th in gonorrheal infections among the 50 states. The primary goal of comprehensive sex education has been to help young people mature into sexually healthy adults void of shame about their sexual feelings and to promote the maturation into becoming a sexually healthy adult. Therefore, appropriate mechansims must be in place to support the provision of comprehensive sexual health education (SIECUS, 2011b; Francis, 2010).

Today, most states have a policy requiring HIV education, as a complement to a broader sexual health education program. Unlike the mandate for the provision of HIV

education in Illinois, sexual health education, of any kind, is not mandated in Illinois (Guttmacher Institute, 2016). Furthermore, if sexual health education is provided in Illinois, abstinence must be stressed with specific emphasis on the importance of sex only with marriage; negative outcomes of teen sex; and avoiding coercion. In fact, Illinois was the only state that required HIV-positive high school students to notify the school principal of their HIV status; allowing the principal to share the information with other school personnel as deemed appropriate (Advocates for Youth, 2014). This law further supports the need for the implementation of comprehensive sexual health education throughout the state of Illinois.

Researchers from the University of Chicago Medical Center (2008) conducted a study to examine the content, quality, and influences on sex education to determine the predictors of a comprehensive sex education curriculum. The study found that 93% of Illinois public schools offered sex education, either by their own teachers and/or with the help of outside agencies. Approximately 24% of the teachers who responded to the survey indicated that they taught an abstinence-only curriculum in combination with, or supplemented by, materials from other curriculums. Nearly one-third of the sex education teachers indicated that they had not received sex education training and about half reported seven or fewer years of experience. When asked why certain topics were omitted, school or district policy was most commonly cited (Lindau, Tetteh, Kasza, Gilliam, 2008). Sexual health education is a component of the overall health education policy discussion. However, as a result of the decentralized management structure of education systems within the states, the sexual health education curricula used are often established or influenced at the district or local level (Fornby et al, 2010).

The current sexual health education policy for the state of Illinois, the Critical Health Problems - Comprehensive Health Education Act, requires the following topics be addressed in all elementary schools and secondary schools: (a) human ecology; (b) human growth and development; (c) emotional, psychological, hygienic, and social responsibilities of family life, including sexual abstinence until marriage; (d) prevention and control of disease; and (e) the transmission and spread of AIDS (SIECUS, 2011a; Comprehensive Health Education Act, 110, 2011). More specifically, this policy requires all schools, that elect to implement sexual health education, to emphasize abstinence as the expected norm and as the only method that provides 100% protection from unwanted teenage pregnancy, STDs, and HIV/AIDS (Comprehensive Health Education Act, 110, 2011; SIECUS, 2011a). Sexual health education, in any form, is not delivered consistently in Illinois, even when the requirements of the Comprehensive Health Education Act are implemented as written. The inconsistency in which sexual health education is delivered has the potential to influence the sexual risk behaviors of high school youth.

The Illinois Personal Responsibility Education Program Act (Senate Bill 1619) was introduced in February of 2011. This legislation proposed to amend the state law to require sexual health education be offered in public schools to include, instruction on contraception. The Act proposed to eliminate language requiring instruction on abstinence until marriage. Senate Bill 1610 did not pass the vote of the full Senate. Subsequently, House Bill 3027, reintroduced the Illinois Personal Responsibility Education Program Act as an amendment, referred to as the Sexual Health Education Bill. Although not a mandate to provide comprehensive sexual health education, when

implemented, the contents of this legislation required school districts to offer sexual health education in grades six thru 12. The enactment of this policy reflected the lack of standardized policy throughout the state and supported researchers' assertions that sexual health education policy is often influenced at the district or local level.

While state legislation regarding comprehensive sexual health education was pending, CPS adopted the Family Life and Comprehensive Sexual Health Education Policy in 2008 (SIECUS, 2011a). This policy required all schools to provide comprehensive, age-appropriate, and medically accurate family life and sexual health education. Furthermore, comprehensive sexual health education must be incorporated into every school's program of study. In 2013, CPS adopted a new policy that mandated comprehensive sexual health education for grades K through 12. This policy also mandated that the curriculum be aligned with the National Sexuality Education Standards, be age appropriate for each grade level, and include instruction about gender identity, gender expression, and sexual orientation. The expanded requirements were scheduled to be fully implemented in 2016 (CDPH, 2013). A critical step in reducing sexual risk behaviors of youth is the consistent implementation of sexual health education (Fonner, Armstrong, Kennedy, O'Reilly, and Sweat, 2014). Requiring comprehensive sexual health education, inclusive of abstinence as a desirable behavior directly correlates to positive shifts in self-reported sexual risk behaviors, delayed onset of sexual activity, and decreases in STD and HIV incidence rates.

Summary

Sexual health education has been recognized as a discipline since the early 1900's. A number of organizations that support sexual health education were established;

guidelines developed to support the implementation of sexual health education programs; sexual health education defined and identified as a vital part of comprehensive health education programs; and barriers to the implementation and ways to overcome these barriers identified. Studies reporting the need for comprehensive sexual health education programs have been completed. However, despite the many efforts and the vocal nature of sexual health education advocates consistency in the implementation of comprehensive sexual health education is not standardized throughout the state of Illinois.

All adolescents have the right to the knowledge, skills, and abilities to make rationale and well informed decisions; the ultimate purpose of comprehensive health education, by virtue of default sexual health education, is to equip adolescents with the tools needed to evaluate different ways of life and choose intelligently among the options in front of them (FoSE, 2012; Corngold, 2011).

According to Atkins and Bradford (2013), a significant road block of existing literature that evaluates the effect of comprehensive sexual health education on youth is the potential for "endogenous selection effects" (p. 6). Youth who engage in high risk sexual behaviors may be more likely to receive sex education than youth who do not engage in high risk sexual behaviors (Atkins & Bradford, 2013).

My research study employed a correlational research model utilizing secondary analysis of YRBS data from CPS. This study examined the correlational relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. This study contributed to the

body of literature by helping to inform the influences comprehensive sexual health education policy has on Chicago high school youths' sexual risk behaviors.

Chapter 3: Research Method

Introduction

The purpose of this correlational study was to explore the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. I analyzed sexual risk behavior data obtained from CPS' YRBS, between the years of 2007 and 2013. In this chapter, I begin by discussing the research design and rationale of the study. Next, I present the methodology I used to conduct the study, and then move to a discussion of potential threats to the validity of the study. I conclude with a brief summary of the information discussed throughout the chapter.

Sexual health education is the foundation on which instruction on STD and HIV/AIDS prevention programs were built (Francis, 2009; Galson, 2008). Access to effective comprehensive sex education supports the development of well-rounded, balanced, and sexually healthy youth (SIECCAN, 2010). Most states have policies requiring HIV education as a complement to a broader comprehensive sexual health education program (Guttmacher, 2016). There are clear guidelines and standards to assist schools, located in states without sexual health education policies, in the design and development of sexual health education programs as a part of a comprehensive school health education approach (FoSE, 2012).

In this study, comprehensive sexual health education was the independent variable and sexual risk behaviors were the dependent variables, measured before and after the enactment of CPS' sexual health education policy. Sexual risk behaviors, as

defined by the YRBS, are sexual behaviors that contribute to unintended pregnancy and STDs, including HIV infections (CDC, 2016).

Research Design and Rationale

I used a correlational study design to explore statistical relationship between comprehensive sexual health education as the independent variable, and sexual risk behaviors, the dependent variables, before and after enactment of CPS' sexual health education policy, in 2008. I considered demographic data (i.e., race/ethnicity and gender) the covariate variables, when analyzing the data to determine the possible relationship with the independent variable, comprehensive sexual health education. Furthermore, the analysis of the covariate variables allowed me to further explore if the consistent implementation of comprehensive sexual health education influenced the sexual risk behaviors of specific demographic populations.

Time and resource constraints were limited to my analysis of the secondary data from the YRBS conducted among CPS high school youth in grades 9–12.

According to the CDC (2016), "priority health-risk behaviors, behaviors that contribute to the leading causes of morbidity and mortality among youth and adults, are often established during childhood and adolescence, extend into adulthood, and are interrelated and preventable" (p. 1). The YRBS, a national school-based survey developed by CDC and administered by state and local education and health agencies, monitors six types of health-risk behaviors that contribute to the leading causes of death and disability among youth and adults, including: (a) behaviors that contribute to unintentional injuries and violence; (b) sexual risk behaviors that contribute to unintended pregnancy and STDs, including HIV infection; (c) alcohol and other drug use;

(d) tobacco use; (e) unhealthy dietary behaviors; and (f) inadequate physical activity. The CDC uses YRBS data to measure progress toward achieving national health objectives (as outlined in *Healthy People 2020*), to assess trends in priority health-risk behaviors among high school students, and to evaluate the impact of school and community interventions at the national, state, and local levels.

Although the literature is limited in regards to studies that examine the relationship between the consistent implementation of sexual health education per state and/or local policy and the sexual risk behaviors of youth, Atkins and Bradford (2013) conducted a study in which they employed a methodology similar to the methodology I used for this research. Atkins and Bradford (2013) utilized YRBS data for 39 states to estimate the impact of state-level sex education policies. They also used demographic data to further examine the relationship between sexual health education and the sexual risk behaviors of youth. However, they were not able to determine and thus account for how students received sexual health education, how their sexual risk behaviors change over time in response to state policy, how state laws change over time, or how the implementation of sex education policies affect youth sexual behaviors over time. The researchers used the linear probability and probit models to show the statistical associations between state policies and sexual risk behaviors. While methodologically similar to the Atkins and Bradford study, my study was not focused on the direct association of state sexual health education policies, but rather on the consistent implementation of sexual health education before and after enactment of local policy.

Methodology

Population

The target population, as defined by the YRBS, was CPS high school youth in grades 9–12. More specifically, I analyzed data obtained from CPS high school youth in grades 9–12 from 2007, one year prior to the implementation of the sexual health education policy, to 2013 to answer my study's research questions. The YRBS target population size included all high school youth in attendance at school during the time in which the YRBS was administered. Because this study spanned four YRBS cycles, the target population size varied based on participation of CPS during any given cycle.

Sampling and Sampling Procedure

The timeframe for data collection for this secondary analysis was a four-cycle period beginning in 2007 and ending in 2013. I extracted sexual risk behavior data provided by high school youth in grades 9–12 from the larger dataset, and used subsets that included students who reported ever having sex to conduct the logistic regression for Hypothesis 1. I stratified the analyses by race/ethnicity and gender, the covariate variables. Additionally, I excluded incomplete YRBS data from the analysis so as not to skew the outcomes.

Recruitment, Participation, and Data Collection

Although the data that I analyzed came from four different YRBS cycles, the recruitment processes remained consistent. The YRBS utilized a two-stage sample design to produce a sample representative of public and private school students in grades 9–12 in states (e.g., Illinois) and large urban school districts (e.g., Chicago). More specifically, in the first sample design, schools with any of the grades 9–12 were sampled based upon

probability in relation to the school's enrollment numbers. In the second sample design, classes for required subjects, such as English or social studies, or a required learning period, such as homeroom, were sampled randomly. All students in the sampled classes were eligible to participate.

The YRBS administered by the CDC for the national, state, and large urban school district surveys were designed to ensure students' anonymity and supported participation in the survey on a voluntary basis (CDC, 2012f). Prior to the administration of the survey, schools were required to follow the documented parental permission processes to ensure parental consent for participation. There were 86 standard questions on the survey; however, each school was able to include additional questions as appropriate. The questions added by each school district were not included in the national analysis to ensure consistency in data analysis. High school students completed the self-administered questionnaire during one class period and recorded their responses directly on a computer-scannable form. The CDC's Institutional Review Board approved the protocol for the national YRBS.

My use of data specific to the YRBS conducted in Chicago for the timeframe of 2007–2013, did not require special permissions. The data I used were available to the general public via the 2013 YRBS National, State, and District Combined Datasets found at http://www.cdc.gov/healthyyouth/data/yrbs/data.htm. Each participating state and city could elect to give the CDC permission to release the data directly to the requestor or require that an official request be made with the respective state or urban school district. CPS gave the CDC permission to release requested data directly to the requestor on their behalf (Appendix A). The most recent YRBS conducted in Chicago was completed in

2015. However, CPS did not use weighted data; the CDC does not release unweighted data.

Instrumentation and Operationalized of Constructs

The CDC developed its first YRBS in 1990 to monitor priority health risk behaviors that contribute significantly to the leading causes of death, disability, and social problems among youth and adults in the United States (CDC, 2014a). The YRBS is conducted biannually, and data is made available to the general public on the national, state, and local levels. In this study, I explored whether there was a statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. The YRBS provides generalizable findings on the sexual risk behaviors of high school students in grades 9–12; however, these same behaviors may be influenced by the implementation of comprehensive sexual health education programs throughout Chicago. The data from the CPS' YRBS allowed for a comparison of the sexual risk behaviors of high school youth before and after the enactment of CPS' comprehensive sexual health education policy in 2008.

Reliability and Validity

Representatives from the Departments of Education in each state, including the District of Columbia and four U.S. territories, reviewed the initial YRBS questionnaire along with 16 local education agencies then funded by the CDC (CDC, 2013a). To further ensure reliability and validity, the questionnaire was disseminated to the National Center for Health Statistics (NCHS) for review and recommendations. The revised

version of the YRBS questionnaire was administered to a national sample of students in grades 9–12. Subsequently, the second version of the questionnaire was sent to the Questionnaire Design Research Laboratory at NCHS for laboratory and field-testing with high school students. CDC later conducted two test retest reliability studies in 1992 and 2000 with groups of high school students throughout the United States (CDC, 2013a). The third and final version of the YRBS questionnaire was revised to include questions to assist with the monitoring of national health objectives, such as those outlined in *Healthy People 2020* (U.S. Department of Health and Human Services, 2014).

Definition of Variables

Independent variable. Comprehensive sexual health education was the independent variable. This variable was determined based upon the existing sexual health education policy that was in place within CPS and the presumed correlation between the independent and dependent variables.

Dependent variable. Sexual risk behaviors were the dependent variables. The sexual risk behaviors analyzed in this study were broken down into nine sub-behaviors. These sub-behaviors represented facets of the empirical domain of high school youth sexual risk behaviors in the Unites States. Eight of the sub-behaviors measure the prevalence of high school youth who engage in the following sexual risk behaviors: (a) ever had sexual intercourse, (b) had sexual intercourse for the first time before age 13 years, (c) had sexual intercourse with four or more persons during their life, (d) currently sexually active (had sexual intercourse with at least one person during the 3 months before the survey), (e) use of a condom (during last sexual intercourse among students who were currently sexually active), (f) use of birth control pills (before last sexual

intercourse to prevent pregnancy among students who were currently sexually active), (g) use of any method to prevent pregnancy (during last sexual intercourse among students who were currently sexually active), (h) drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active); and (i) were never taught about AIDS of HIV in school.

Data Analysis Software

Statistical Analysis System (SAS 9.3) was the software used to complete the data analyses described in this section. CPS high school youth in grades 9–12 sexual risk behaviors were included in the data set and used for analyses in reference to the established research questions and hypotheses. The race/ethnicity and gender of the high school youth were coded to allow for the covariate data analysis previously described. All analyses were conducted with the consideration of survey sampling design and weightings.

Research Questions

The research questions represented facets of the empirical domain on comprehensive sexual health education discussed in the vast amounts of literature related to the effectiveness and implementation of comprehensive sexual health education. The below research questions guided this study, and added to the literature using a comprehensive sample of students in high school throughout the City of Chicago. The research questions were:

1. How does the implementation of comprehensive sexual health education influence (increase or decrease) the following sexual behaviors of Chicago high school youth in grades 9–12 :

- Ever had sexual intercourse
- Sexual intercourse before the age of 13 years (for the first time)
- Sexual intercourse with four or more persons during their life
- Currently sexually active (sexual intercourse with at least one person during the 3 months before the survey)
- Did not use a condom (during last sexual intercourse among students who were currently sexually active)
- Did not use birth control pills (before last sexual intercourse to prevent pregnancy among students who were currently sexually active)
- Did not use any method to prevent pregnancy (during last sexual intercourse among students who were currently sexually active)
- Drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active)
- Were never taught about AIDS or HIV in school

2. How does the implementation of comprehensive sexual health education influence (increase or decrease) sexual behaviors of Chicago high school youth in grades 9–12, by race/ethnicity (covariate)?
3. How does the implementation of comprehensive sexual health education influence (increase or decrease) sexual behaviors of Chicago high school youth in grades 9–12, by gender (covariate)?

Hypotheses

The hypotheses were in alignment with the purpose of the study and representative of the three research questions outlined above. The null hypotheses indicated there was no relationship between the independent and dependent variables, thereby countering the research hypotheses. These hypotheses were measured using statistical tests at the 0.05 significance level and 95% confidence level.

Null Hypothesis (H_{01}): The consistent implementation of comprehensive sexual health education is not significantly related to the sexual risk behaviors among Chicago high school youth in grades 9–12.

Research Hypothesis (H_1): The consistent implementation of standardized comprehensive sexual health education is significantly related to the sexual risk behaviors among Chicago high school youth in grades 9–12.

Null Hypotheses ($H0_2$): The consistent implementation of comprehensive sexual health education does not significantly influence (increase or decrease) the sexual risk behaviors among Chicago high school youth in grades - 12.

Research Hypothesis (H_2): The consistent implementation of comprehensive sexual health education does significantly influence (increase or decrease) the sexual risk behaviors among Chicago high school youth in grades 9–12.

Data Analysis

Due to the complex sampling design of YRBS, all statistical analyses were conducted using weighted data as suggested by the CDC. A weight based on gender, race/ethnicity, and grade was applied to each record to adjust for missing responses and oversampling of Black/African American and Hispanic/Latino students. Logistic

regression was conducted to estimate the prevalence and a 95% confidence interval of each dependent variable before and after enactment of the sexual health education policy in 2008 for Chicago high school youth. Logistic regression is used to test the predictive power of a variable, comprehensive sexual health education (Pallant, 2010). More specifically, using logistic regression, I was able to assess whether the consistent implementation of comprehensive sexual health education (independent variable) influenced the sexual risk behaviors (dependent variables) of high school youth and whether there is a difference before and after enactment of the comprehensive sexual health education policy in 2008.

Odds ratios and 95% confidence intervals were estimated to analyze how the implementation of comprehensive sexual health education influenced (increased or decreased) the sexual risk behaviors of high school youth. Odds ratios are a commonly used measure in epidemiology to quantify associations between an exposure and an outcome. Odds ratios are used to compare whether the odds of an occurrence of the outcome of interest, sexual health education, decreases sexual risk behaviors of high school youth, given exposure to the variable of interest (Szumilas, 2010). The odds ratio can also be used to determine whether a particular exposure is a risk factor for a particular outcome, and to compare the magnitude of various risk factors for that outcome. Specific to this study, an odds ratio with confidence interval overlapping 1 indicated no significant association between sexual health education and the sexual risk behaviors, or the null hypothesis. Consequently, an odds ratio away from 1, either larger than 1 (increase of sexual risk behaviors) or less than 1 (decrease of sexual risk behaviors), showed a possible significant association with sexual health education. As

stated in the previous section, the above described analyses were performed for all high school students in grades 9–12 and stratified by race/ethnicity (i.e., Black/African American and Hispanic/Latino) and gender (i.e., female and male).

Threats to Validity

Researchers from the CDC (2013a) conducted a review in 2003 to assess the cognitive and situational factors that might affect the validity of adolescent self-reporting of behaviors measured by the YRBS questionnaire. These factors were found to not threaten the validity of self-reported behaviors, thus, there was no threat to the validity of the YRBS national questionnaire. However, there has not been a study conducted to assess the validity of all self-reported sexual risk behaviors captured by the YRBS. Furthermore, self-reports of sexual behavior can be influenced by both cognitive and situational factors, but no standard exists to validate the behavior. According to the CDC, "understanding the differences in factors that compromise the validity of self-reporting of different types of behavior can assist policymakers in interpreting data and researchers in designing measures that do not compromise validity" (p. 6).

Ethical Procedures

This study used secondary data obtained from the CPS' YRBS. Therefore, there was no threat of violating study participants' rights. Additionally, anonymity and confidentiality for all educational institutions and participants of this study were guaranteed; the Chicago YRBS dataset did not include personal identifiers. The survey was completed anonymously and therefore reduced the potential for breaches of confidentiality. The data analyzed for this study were used to answer the research

questions and hypotheses and the results and findings from data analysis are presented in the next chapter. This study was approved by Walden University's Institutional Review Board (IRB). The IRB approval number is 02-11-16-0131445.

Summary

This study employed a correlational study design to explore the statistical relationship between comprehensive sexual health education as the independent variable and the sexual risk behaviors, the dependent variables. Demographic data, specifically, race/ethnicity and gender, the covariate variables, were considered when analyzing the data to determine the possible relationship with the independent variable, comprehensive sexual health education. Logistic regression and odds ratios were estimated to explore the relationship between comprehensive sexual health education and the sexual risk behaviors of high school students.

Chapter 4: Results and Findings

Introduction

The purpose of this correlational study was to explore the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. I analyzed sexual risk behavior data obtained from the YRBS that was collected during the administration of CPS' YRBS, for years 2007, 2009, 2011, and 2013.

Research Questions

The research questions that guided this research study were:

1. How does the implementation of comprehensive sexual health education influence (increase or decrease) the following sexual behaviors of Chicago high school youth in grades 9–12:
    - Ever had sexual intercourse (S1)
    - Sexual intercourse before the age of 13 years (for the first time) (S2)
    - Sexual intercourse with four or more persons during their life (S3)
    - Currently sexually active (sexual intercourse with at least one person during the 3 months before the survey) (S4)
    - Did not use a condom (during last sexual intercourse among students who were currently sexually active) (S5)
    - Did not use birth control pills (before last sexual intercourse to prevent pregnancy among students who were currently sexually active (S6)

- Did not use any method to prevent pregnancy (during last sexual intercourse among students who were currently sexually active) (S7)
- Drank alcohol or used drugs before last sexual intercourse (among students who were currently sexually active) (S8)
- Were never taught about AIDS or HIV in school (S9)

2. How does the implementation of comprehensive sexual health education influence (increase or decrease) sexual behaviors of Chicago high school youth in grades 9–12, by race/ethnicity (covariate)?
3. How does the implementation of comprehensive sexual health education influence (increase or decrease) sexual behaviors of Chicago high school youth in grades 9–12, by gender (covariate)?

Hypotheses

The hypotheses were in alignment with the purpose of the study and representative of the three research questions outlined above. The null hypotheses indicates there is no relationship between the independent and dependent variables, thereby countering the research hypotheses. The hypotheses were measured using statistical tests at the 0.05 significance level and 95% confidence level.

Null Hypothesis (H_{01}): The consistent implementation of comprehensive sexual health education is not significantly related to the sexual risk behaviors among Chicago high school youth in grades 9–12.

Research Hypothesis (H_1): The consistent implementation of standardized comprehensive sexual health education is significantly related to the sexual risk behaviors among Chicago high school youth in grades 9–12.

Null Hypotheses ($H0_2$): The consistent implementation of comprehensive sexual health education does not significantly influence (increase or decrease) the sexual risk behaviors among Chicago high school youth in grades 9–12.

Research Hypothesis (H_2): The consistent implementation of comprehensive sexual health education does significantly influence (increase or decrease) the sexual risk behaviors among Chicago high school youth in grades 9–12.

In this chapter, I present the results of the statistical analyses I performed to answer the research questions. First, I present the results from the preliminary analysis to estimate the prevalence rates for the sexual risk behaviors among Chicago high school youth. Next, to answer Research Question 1, I present the results from the analysis of the potential influences of comprehensive sexual health education on the sexual risk behaviors of Chicago high school youth. Finally, to answer Research Questions 2 and 3, I provide an analysis of results of the potential influences of comprehensive sexual health education on the sexual risk behaviors of Chicago high school youth by race/ethnicity (i.e., African-American/Black and Hispanic/Latino) and gender. This chapter concludes with a summary of the findings from the data analysis and an overview of Chapter 5.

Data Collection

I used existing data from the CDC YRBS dataset that was available to the general public, and was collected during designated CPS high school classes. The data were collected from CPS students in grades 9–12 who were in attendance at school on the day the YRBS was administered. Data from CPS' YRBS 2007, 2009, 2011, and 2013 cycles were used in the analyses for this study. I extracted sexual risk behaviors data provided by high school youth in grades 9–12 from the larger YRBS dataset.

Results

CPS is the third largest school district in the United States. In fiscal year 2016, 392,285 students were in CPS, of which 111,167 were enrolled at a CPS high school. Black/African-American and Hispanic/Latino students comprise approximately 86% of the total high school student enrollment (CPS, 2016). A total of 5,898 surveys were completed by Chicago high school youth. It is important to note that I included only surveys completed in their entirety in the analyses. Black/African-American students accounted for approximately 39% (2,329) of the respondents, and Hispanic/Latino students accounted for approximately 44% (2,589) of the respondents. Of the students who provided their gender, females accounted for approximately 58.6% (3,123) of the respondents, and males accounted for approximately 48.4% (2,738) of the respondents. Thirty-seven students did not identify as male or female.

Research Question 1: Prevalence of Sexual Behaviors Among all Chicago High School Youth

To analyze the potential influences of sexual health education, I estimated the prevalence of nine sexual risk behaviors using available YRBS data from 2007 - 2013 (see Table 1). Results indicated that there were large variances across different sexual risk behaviors among all Chicago high school youth. Approximately 90% of Chicago high school youth did not use birth control pills before their last engagement in sexual intercourse to prevent pregnancy, while approximately 12% of the youth had sexual intercourse for the first time before the age of 13 at baseline. Over the 6-year period from which I analyzed YRBSS data (2007–2013), the prevalence of these sexual risk behaviors was relatively stable, as shown in Table 1. However, according to my analysis of sexual

risk behavior prevalence rates, the rate of Chicago high school youth who reported they were never taught about AIDS or HIV in school increased after 2007, from 15.9% in 2007 to 23.1% in 2013. Additionally, according to my analysis of sexual risk behavior prevalence rates, the rate of Chicago high school youth who reported drinking alcohol or using drugs before their last sexual encounter increased after 2007, from 12.5% to 18.8% in 2013.

Table 1

Prevalence of Sexual Behaviors among High School Students in Chicago, IL, Youth Risk Behavior Survey 2009-2013

	2007 (Baseline)		2009		2011		2013	
Sexual Behaviors	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Ever had sex	56.9	[52.7 - 61.1]	53.6	[48.2 - 59.0]	52.2	[47.0 - 57.3]	51.8	[46.6 - 57.0]
Had sex before 13	11.5	[8.2 - 14.9]	12.0	[8.7 - 15.2]	11.9	[9.9 - 14.0]	9.6	[6.6 - 12.6]
Had sex with 4+ people in life	18.1	[14.8 - 21.4]	19.5	[15.3 - 23.6]	17.5	[14.3 - 20.8]	16.4	[12.7 - 20.2]
Were currently sexually active	39.8	[35.7 - 43.8]	39.3	[33.5 - 45.2]	37.8	[33.8 - 41.7]	36.8	[32.0 - 41.6]
Did not use a condom	32.2	[25.1 - 39.3]	34.9	[28.4 - 41.4]	35.7	[30.8 - 40.5]	38.7	[33.3 - 44.2]
Did not use birth control pills	90.5	[86.1 - 94.9]	89.0	[85.5 - 92.5]	88.2	[85.1 - 91.2]	89.4	[86.8 - 92.1]
Did not use any method to prevent pregnancy	14.9	[9.9 - 19.9]	15.7	[11.4 - 20.1]	17.3	[12.6 - 22.0]	17.6	[13.3 - 21.9]
Drank alcohol or used drugs before last sex	12.5	[7.9 - 17.0]	18.1	[12.6 - 23.5]	21.3	[17.3 - 25.4]	18.8	[14.4 - 23.2]
Were never taught about AIDS or HIV in school	15.9	[11.9 - 19.8]	16.4	[13.1 - 19.7]	27.1	[23.5 - 30.6]	23.1	[19.1 - 27.1]

I examined the potential influences or the direction of change (increase or decrease) for the nine sexual risk behaviors, based on the enactment of CPS' sexual

health education policy in 2008, by estimating the odds ratios and associated confidence intervals (see Figure 1). Comparing the data from each of the three CPS YRBS cycles administered post-enactment of CPS' sexual health education policy to the data from the 2007 YRBS cycle (baseline), I found that the majority of the sexual risk behaviors were relatively stable without significant changes over the 6-year timeframe. However, as I expected from the prevalence estimates previously described, the likelihood of high school students who drank alcohol or used drugs before their last sexual encounter and who reported never being taught about AIDS or HIV in school increased. The likelihood of Chicago high school students who drank alcohol or used drugs before their last sexual encounter ranged between 1.5 and 1.8, indicating a possible association with comprehensive sexual health education. Additionally, the likelihood of high school students who reported never being taught about AIDS or HIV in school ranged from 1.1 to 1.9, again indicating a possible association with comprehensive sexual health education. Further analyses to explore this association are described below.

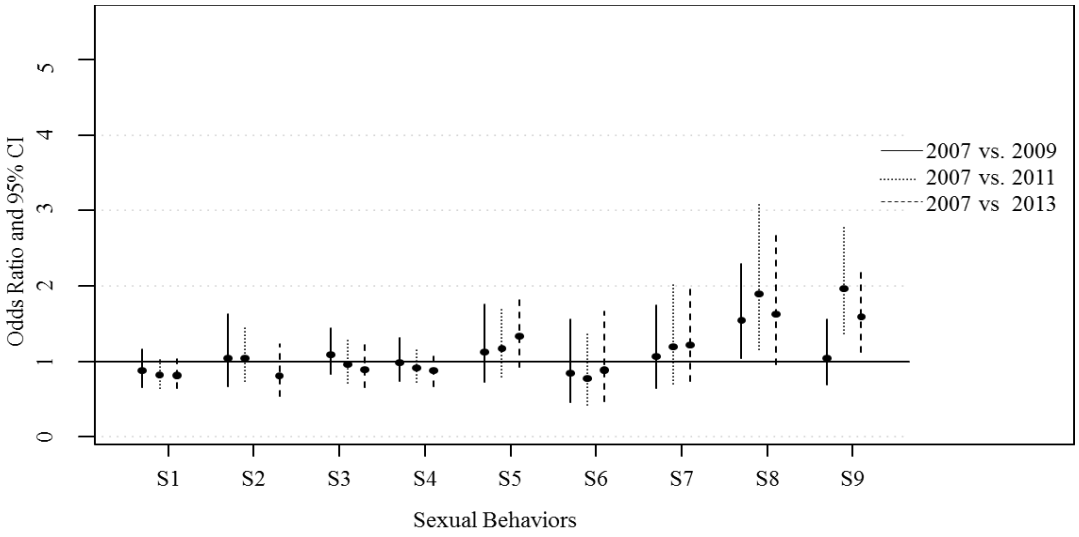

Figure 1. Odds ratios of sexual behaviors among all students at Chicago, IL, Youth Risk Behavior Survey.

Research Questions 2: Prevalence of Sexual Behaviors among Black/African-American and Hispanic/Latino High School Students

To further explore the potential confounding effects of race/ethnicity, I performed similar prevalence and odds ratio analyses stratified by Black/African American and Hispanic/Latino high school students. Tables 2a and 2b show the prevalence rates for nine sexual risk behaviors for Black/African American and Hispanic/Latino students, respectively. Approximately 60% of Black/African American students reported ever having sex, while Hispanic/Latino students who reported ever having sex was approximately 50%. Conversely, approximately 28% of Black/African American students did not use a condom during their last sexual intercourse encounter, in comparison to 47% of Hispanic/Latino students. Over the 6-year period for which I analyzed YRBS data, the prevalence of the sexual risk behaviors were relatively stable for both Black/African American and Hispanic/Latino students. Interestingly, and unlike with other sexual risk behaviors, the prevalence rate associated with not using birth control pills before the last sexual intercourse encounter to prevent pregnancy decreased from 94% in 2007, to as low as 85% in 2011 for Black/African American students. The prevalence increased to 90% in 2013. For Hispanic/Latino students, the prevalence of ever having sex decreased from 53.6% in 2007, to as low as 45% in 2013, and the prevalence associated with having sex with 4 or more people during their life decreased from 14.9% in 2007, to as low as 9.5% in 2013. These findings were consistent with odds ratio the analyses shown in Figures 2a and 2b.

Table 2a

Prevalence of Sexual Behaviors among Black Students in Chicago, IL, Youth Risk Behavior Survey 2009-2013

	2007 (Baseline)		2009		2011		2013	
Sexual Behaviors	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Ever had sex	63.3	[57.0 - 69.6	60.2	[54.4 - 66.0]	59.9	[51.1 - 68.7]	65.9	[60.2 - 71.6]
Had sex before 13	15.6	[11.1 - 20.1]	16.5	[13.3 - 19.8]	16.2	[13.0 - 19.4]	15.0	[9.5 - 20.5]
Had sex with 4+ people in life	22.0	[16.1 - 27.8]	25.2	[19.4 - 31.0]	22.8	[16.2 - 29.5]	27.0	[21.3 - 32.8]
Were currently sexually active	47.8	[43.0 - 52.6]	42.3	[35.0 - 49.5]	45.2	[37.9 - 52.5]	48.1	[42.1 - 54.2]
Did not use a condom	24.1	[16.1 - 32.0]	28.9	[22.6 - 35.3]	29.7	[23.2 - 36.3]	39.3	[31.1 - 47.5]
Did not use birth control pills	94.1	[91.1 - 97.1]	89.8	[85.3 - 94.3]	85.4	[80.3 - 90.5]	90.0	[86.2 - 93.9]
Did not use any method to prevent pregnancy	14.4	[8.7 - 20.1]	15.6	[9.2 - 22.1]	16.5	[9.7 - 23.4]	20.3	[11.8 - 28.7]
Drank alcohol or used drugs before last sex	8.6	[4.5 - 12.7]	16.2	[11.1 - 21.3]	17.7	[12.6 - 22.7]	19.2	[13.0 - 25.5]
Were never taught about AIDS or HIV in school	15.3	[9.6 - 20.9]	14.3	[10.3 - 18.4]	25.3	[20.1 - 30.5]	24.1	[16.2 - 32.0]

Table 2b

Prevalence of Sexual Behaviors among Hispanic Students at Chicago, IL, Youth Risk Behavior Survey 2009-2013

	2007 (Baseline)		2009		2011		2013	
Sexual Behaviors	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Ever had sex	53.6	[47.9 - 59.3]	52.1	[45.3 - 58.8]	47.4	[41.8 - 53.0]	45.1	[40.1 - 50.2]
Had sex before 13	9.0	[4.8 - 13.2]	7.0	[3.2 - 10.7]	7.6	[5.7 - 9.6]	6.6	[4.3 - 8.8]
Had sex with 4+ people in life	14.9	[10.9 - 19.0]	14.6	[10.2 - 19.1]	11.7	[9.0 - 14.3]	9.5	[6.2 - 12.9]
Were currently sexually active	34.6	[28.6 - 40.6]	38.3	[31.9 - 44.7]	33.4	[28.7 - 38.1]	29.7	[24.2 - 35.2]
Did not use a condom	41.8	[30.1 - 53.4]	47.4	[38.8 - 55.9]	43.0	[36.6 - 49.3]	44.4	[38.6 - 50.2]
Did not use birth control pills	88.3	[81.2 - 95.4]	88.1	[82.6 - 93.5]	90.9	[87.4 - 94.5]	90.5	(86.2 - 94.7]
Did not use any method to prevent pregnancy	18.3	[8.4 - 28.2]	20.8	[13.9 - 27.8]	18.6	[13.3 - 24.0]	18.3	[11.9 - 24.7]
Drank alcohol or used drugs before last sex	14.9	[6.7 - 23.1]	21.4	[10.3 - 32.6]	21.7	[17.0 - 26.5]	17.2	[11.7 - 22.6]
Were never taught about AIDS or HIV in school	17.0	[12.6 - 21.5]	19.0	[16.2 - 21.9]	26.8	[23.0 - 30.7]	25.1	[21.2 - 28.9]

As shown in Figures 2a and 2b, when the data from each of the three CPS YRBS cycles administered post enactment of CPS' sexual health education policy were compared to the data from the 2007 YRBS cycle (baseline), the majority of the sexual risk behaviors were relatively stable with odds ratios around 1. However, the likelihood of not using birth control pills before the last sexual intercourse encounter decreased, after the implementation of comprehensive sexual health education among Black/African American students. The odds ratio ranged from .5 to .6. Similarly, the likelihood that

Hispanic/Latino students ever had sex and had sex with four or more people in their life decreased to an odds ratio below 1 during the timeframe of 2009 to 2013.

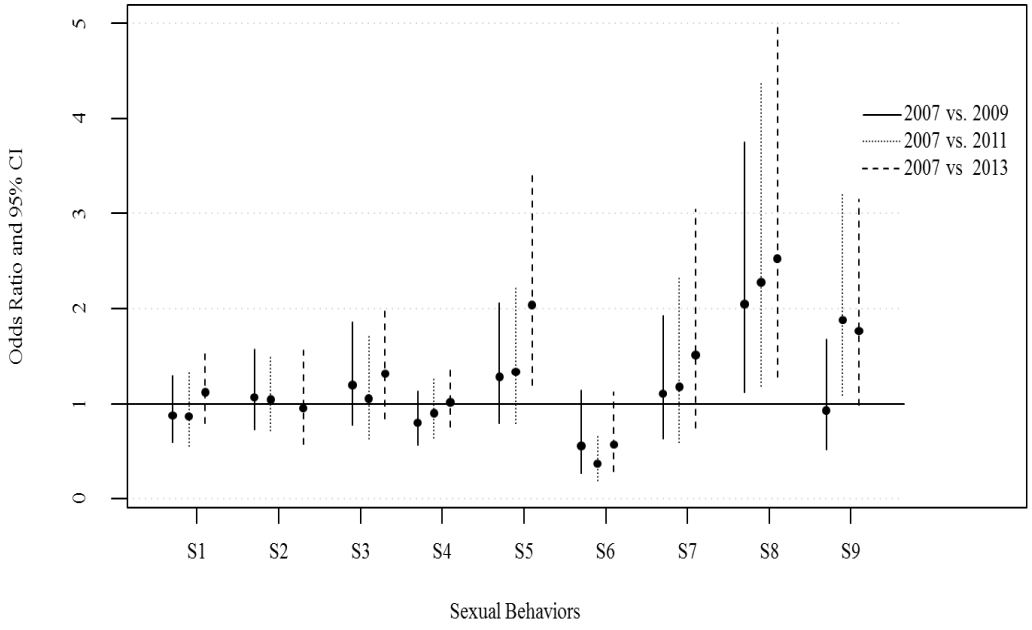

Figure 2a. Odds ratios of sexual behaviors among Black/African/American students at Chicago, IL, Youth Risk Behavior Survey.

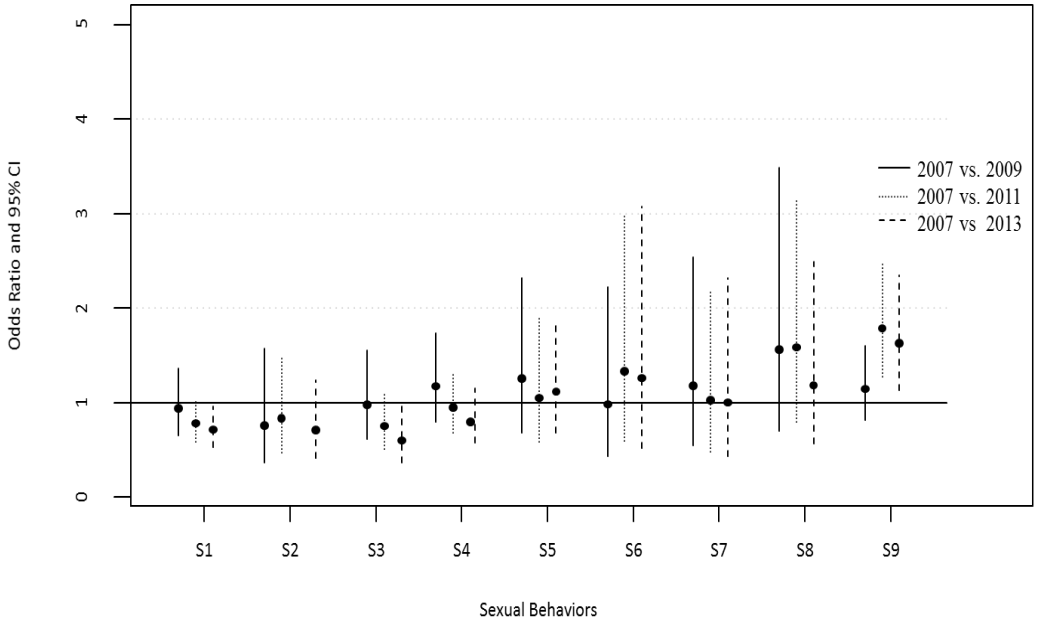

Figure 2b. Odds ratios of sexual behaviors among Hispanic/Latino students at Chicago, IL, Youth Risk Behavior Survey.

Research Question 3- Prevalence of Sexual Behaviors among Female and Male High School Students

I further explored the potential confounding effects of gender by estimating the prevalence rates, odds ratios, and 95% confidence intervals, stratified by male and female students. Table 3a and 3b show the prevalence of the nine sexual risk behaviors for female and male students, respectively. As high as 5.8% of female students reported having had sex before age of 13, while as low as 17% of male students had sex before age 13. Again, comparing the data from the three CPS YRBS cycles administered after the enactment of CPS' sexual health education policy, with 2007 indicated at the baseline year, the prevalence of the sexual risk behaviors were relatively stable for male students.

However, for female students, different sexual behaviors exhibited variant patterns after the implementation of comprehensive sexual health education. The prevalence rates for some sexual risk behaviors, including ever having had sex, had sex before age 13, and being currently sexually active, decreased after 2007. The prevalence for female students who were currently sexually active decreased from 40.6% in 2007 to 33% in 2013. The prevalence for female students who reported ever having sex decreased from 53% in 2007 to 45% in 2013. The prevalence of female students who reported having four or more sexual partners decreased after 2007. However, there was a variance in the prevalence from 2009 (9.6%), 2011 (10.5%), and 2013 (7.7%). Conversely, the prevalence associated with never being taught about HIV or AIDS in school increased from 12% in 2007 to 25% in 2011; a potential area of ambiguity that

needs to be addressed within the sexual health education policy. These findings were consistent with the odds ratio analyses shown in Figures 3a and 3b.

Table 3a

Prevalence of Sexual Behaviors among Female Students at Chicago, IL, Youth Risk Behavior Survey 2009-2013

	2007 (Baseline)		2009		2011		2013	
Sexual Behaviors	%	95% CI	%	95% CI)	%	95% CI	%	95% CI
Ever had sex	53.0	[47.9 - 58.0]	45.3	[38.6 - 52.0]	45.7	[39.7 - 51.6]	45.0	[39.0 - 51.1]
Had sex before 13	5.8	[3.8 - 7.9]	5.1	[3.3 - 6.9]	4.2	[2.5 - 5.9]	3.0	[1.8 - 4.2]
Had sex with 4+ people in life	10.7	[8.1 - 13.3]	9.6	[7.2 - 11.9]	10.5	[7.6 - 13.5]	7.7	[5.0 - 10.3]
Were currently sexually active	40.6	[36.0 - 45.2]	35.5	[29.4 - 41.6]	33.4	[28.6 - 38.3]	33.4	[28.0 - 38.8]
Did not use a condom	36.5	[28.8 - 44.2]	42.4	[33.7 - 51.2]	40.2	[32.4 - 48.1]	48.1	[40.1 - 56.2]
Did not use birth control pills	88.5	[83.4 - 93.7]	88.8	[84.3 - 93.4]	87.2	[82.8 - 91.5]	88.9	[85.1 - 92.7]
Did not use any method to prevent pregnancy	14.7	[9.3 - 20.1]	20.5	[14.4 - 26.6]	19.2	[13.6 - 24.8]	22.1	[16.3 - 28.0]
Drank alcohol or used drugs before last sex	8.7	[4.2 - 13.3]	12.3	[7.7 - 16.9]	16.5	[12.6 - 20.5]	13.1	[7.4 - 18.7]
Were never taught about AIDS or HIV in school	12.3	[8.0 - 16.6]	14.2	[11.6 - 16.8]	25.0	[20.6 - 29.5]	22.2	[17.2 - 27.1]

Table 3b

Prevalence of Sexual Behaviors among Male Students at Chicago, IL, Youth Risk Behavior Survey 2009-2013

	2007 (Baseline)		2009		2011		2013	
Sexual Behaviors	%	95% CI	%	95% CI	%	95% CI	%	95% CI
Ever had sex	61.9	[55.8 - 68.1]	61.9	[54.4 - 69.4]	60.3	[54.9 - 65.8]	59.6	[53.7 - 65.5]
Had sex before 13	18.7	[11.8 - 25.6]	18.4	[12.6 - 24.2]	21.5	[17.5 - 25.6]	17.1	[10.6 - 23.5]
Had sex with 4+ people in life	27.4	[20.2 - 34.5]	29.0	[21.3 - 36.7]	26.3	[21.6 - 31.0]	26.4	[19.6 - 33.3]
Were currently sexually active	38.7	[32.7 - 44.6]	43.0	[34.9 - 51.0]	43.3	[38.4 - 48.1]	40.7	[34.5 - 46.8]
Did not use a condom	26.4	[16.4 - 36.4]	29.0	[20.9 - 37.0]	30.8	[25.7 - 36.0]	29.7	[23.2 - 36.2]
Did not use birth control pills	93.2	[88.1 - 98.4]	89.0	(84.1 - 93.9]	89.1	[85.0 - 93.2]	89.9	[85.9 - 93.8]
Did not use any method to prevent pregnancy	15.3	[7.1 - 23.4]	12.0	[7.0 - 16.9]	15.2	[8.8 - 21.5]	13.3	[8.3 - 18.3]
Drank alcohol or used drugs before last sex	17.4	[9.7 - 25.1]	23.1	[15.1 - 31.1]	25.8	[20.2 - 31.5]	23.9	[17.9 - 30.0]
Were never taught about AIDS or HIV in school	19.7	[13.4 - 26.0]	18.1	[12.9 - 23.3]	29.0	[25.0 - 33.0]	24.1	[19.7 - 28.6]

As shown in Figures 3a and 3b, when the data associated with gender from each of the three CPS YRBS cycles administered post enactment of CPS' sexual health education policy were compared to the baseline data, the majority of the sexual risk behaviors were relatively stable with odds ratio intervals overlapping 1 for male students. However, for female students, there were four sexual risk behaviors with odds ratios below 1, including ever had sex, had sex before age 13, had sex with four or more people, and being currently sexually active.

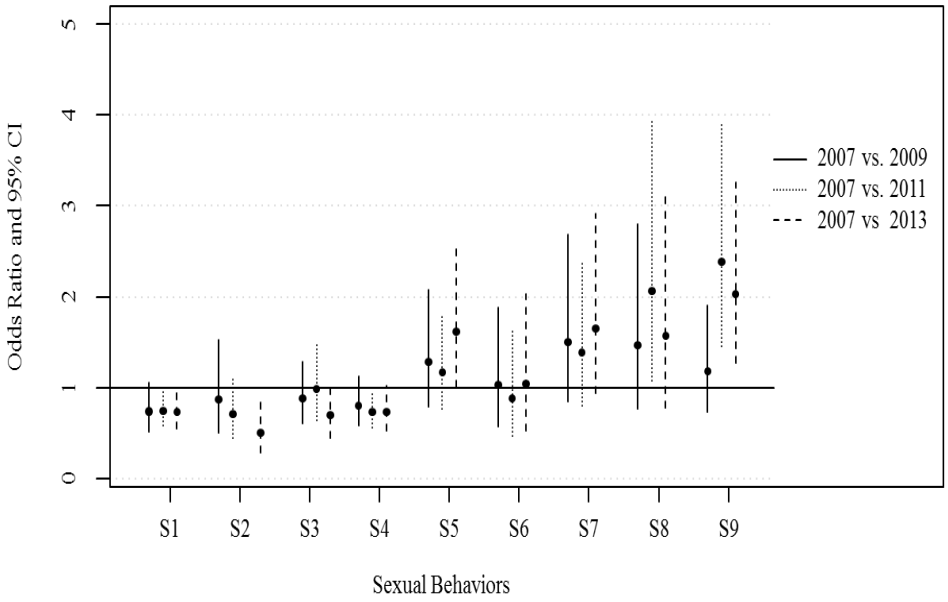

Figure 3a. Odds ratios of sexual behaviors among female students at Chicago, IL, Youth Risk Behavior Survey.

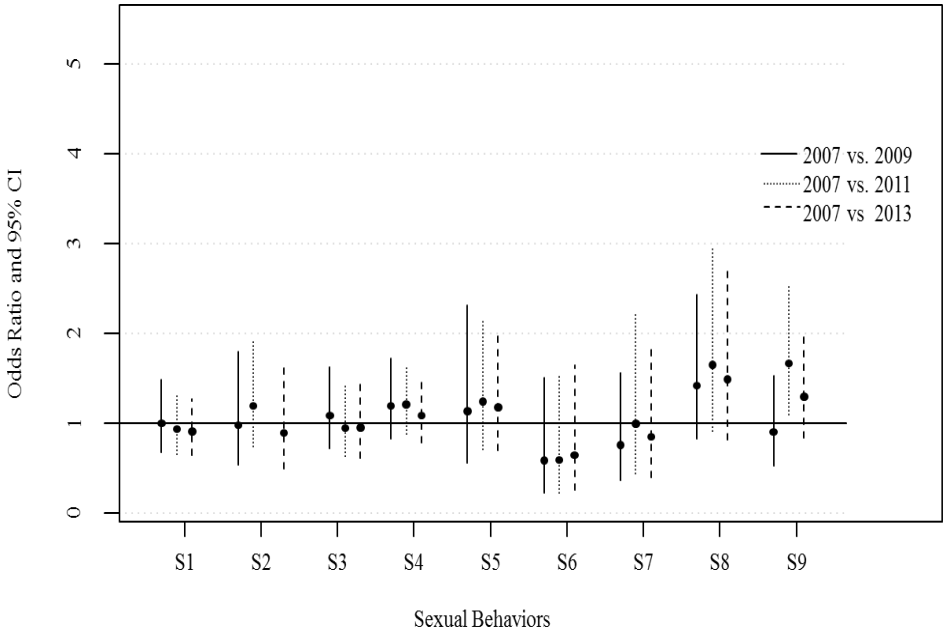

Figure 3b. Odds ratios of sexual behaviors among male students at Chicago, IL, Youth Risk Behavior Survey.

Summary

In summary, my analyses of the prevalence and odds ratio suggested a complex pattern for the nine sexual risk behaviors of Chicago high school students, before and

after enactment of CPS' comprehensive sexual health education policy. The prevalence for some of sexual risk behaviors increased after comprehensive sexual health education was implemented, possibly challenging the promotion of safe and healthy sexual behaviors. The decrease of sexual risk behaviors over the years suggested an influence and benefit of comprehensive sexual health education in schools. In addition, race/ethnicity and gender were important confounding factors that appear to have influenced the prevalence for some of the sexual risk behaviors.

Chapter 5: Discussion, Conclusions, Recommendations, and Future Research

Introduction

The purpose of this correlational study was to explore the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12. I analyzed sexual risk behavior data obtained from the CDC's YRBS and collected during the administration of CPS' 2007, 2009, 2011, and 2013 YRBS cycles. In this chapter I provide a summary of the study and then: (a) discuss the findings and my interpretation of the results, (b) identify the study's limitations, (c) make recommendations for future research, and (e) offer a conclusion to the study.

Findings from this study indicated a complex pattern of sexual risk behaviors among Chicago high school students in grades 9–12 before and after implementation of the comprehensive sexual health education policy. According to my analysis of data from the four YRBS cycles (2007, 2009, 2011, and 2013), the prevalence of sexual behaviors remained relatively stable. However, I found that the prevalence for some of the sexual risk behaviors increased after the mandatory implementation of comprehensive sexual health education. The prevalence of students who reported drinking alcohol or using drugs before their last sexual encounter increased from 12.5% in 2007, to 18.8% in 2013. Although, comprehensive sexual health education was mandated beginning in 2008, the prevalence of students reporting never being taught about AIDS or HIV increased from 15.9% in 2007, to 23.1% in 2013.

I conducted analyses to explore the influence of confounding factors by race/ethnicity and gender. Analyses I performed to explore the sexual risk behaviors of Black/African American and Hispanic/Latino students showed that the sexual risk behaviors of Black/African American and Hispanic/Latino students remained relatively stable. However, the prevalence of not using birth control pills before the last sexual encounter to prevent pregnancy among black students decreased from 94% in 2007, to 85% in 2011. Although the prevalence increased in 2013, the odds ratio remained below 1, indicating a positive influence and benefit of comprehensive sexual health education in schools. Among Hispanic/Latino students, the likelihood of ever having had sex and having four or more sexual partners decreased and resulted in an odds ratio below 1. These analyses found that the implementation of comprehensive sexual health education influenced the sexual risk behaviors of females. Specifically, the odds ratios for: (a) ever had sex, (b) had sex before age 13, (c) had four or more sexual partners, and (d) currently sexually active were less than 1. These results indicated a possible significant association between comprehensive sexual health education and decreases in sexual risk behaviors. The decrease of sexual risk behaviors over the years indicates an influence and benefit of comprehensive sexual health education in schools. Race/ethnicity and gender were important confounding factors that appear to have influenced the prevalence for some of the sexual risk behaviors.

Interpretation of the Findings

High school students often engage in behaviors that place them at risks, whether knowingly or unknowingly (CDC, 2014a). Additionally, the prevalence of many risk behaviors varies by race/ethnicity, gender, geographic location (e.g. urban versus rural

school districts), and grade (CDC, 2014a). Consequently, results from CDC's 2015 national YRBS indicated that high school students engaged in risk behaviors that were associated with the leading causes of death among persons aged 10–24 years (CDC, 2016).

In this study, I explored the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of the CPS' sexual health education policy in 2008, and the sexual risk behaviors of Chicago high school youth in grades 9–12. My interpretation of the study finding are presented below and arranged by research question. Data analysis results indicated that there were variances across the different sexual risk behaviors among Chicago high school youth in grades 9–12. These variances can be attributed to the diverse composition of the CPS student population.

Over the 6-year period (2007–2013) for which I analyzed YRBS data, the prevalence of the sexual risk behaviors remained relatively stable. However, there was a notable increase in Chicago high school youth who reported drinking alcohol or using drugs before their last sexual encounter and who reported they were never taught about AIDS or HIV in school—from 12.5% in 2007 to 18.8% 2013 and 15.9% in 2007 to 23.1% in 2013, respectively. Kirby's review of 115 sex education programs scientifically supported research findings and showed a delay in the initiation of sex, the number of sexual partners, and increased use of condoms during sexual intercourse (Advocates for Youth, 2012; FoSE, 2012; CDC, 2009; Kirby, 2007). However, Kirby did not detail specifics associated with the correlation between sexual risk behaviors and drug use, an

emerging concern of sexual health education professionals (Clayton, Lowry, August, & Jones, 2016).

Atkins and Bradford (2013) conducted a study utilizing YRBS data for 39 states to estimate the impact of state-level sex education policies. They used the demographic data of the students to examine the relationship between sexual health education and sexual risk behaviors of youth. The researchers found that states that required sexuality education and contraceptive content, or states that mandated education but left the content to the discretion of the local school districts, had higher rates of contraception use among teens that were sexually active. When I analyzed data for all high school youth, the reported use of contraception (i.e., condom use or use of birth control pills) remained relatively stable from 2007 to 2013. However, when looking at the findings stratified by race/ethnicity, I observed a noticeable decrease. More specifically, the prevalence rate associated with not using birth control pills before the last sexual intercourse encounter to prevent pregnancy decreased from 94% in 2007 to as low as 85% in 2011 for Black/African American students. The prevalence rate associated with not using birth control pills before the last sexual intercourse encounter to prevent pregnancy, however, increased to 90% in 2013. For Hispanic/Latino students, the prevalence of ever having sex decreased from 53.6% in 2007, to as low as 45% in 2013, and the prevalence associated with having sex with four or more people during their life decreased from 14.9% in 2007, to as low as 9.5% in 2013.

A review of 62 CRR interventions by CDC's Community Preventive Services Task Force (2009) showed that the most effective programs to promote behaviors that reduce risk of becoming pregnant and preventing STDs and HIV are comprehensive

programs that include a focus on delaying sexual behavior and provide information on how sexually active adolescents can protect themselves. My analyses of sexual risk behaviors stratified by gender, further supported existing research associated with the effectiveness of comprehensive sexual health education. The prevalence for female students who were currently sexually active decreased from 40.6% in 2007, to 33% in 2013. The prevalence for female students who reported ever having sex decreased from 53% in 2007, to 45% in 2013. The prevalence of female students who reported having four or more sexual partners realized an overall decrease after implementation of CPS' sexual health education policy in 2008. However, there was a variance in the prevalence from 2009 (9.6%), 2011 (10.5%), and 2013 (7.7%). Conversely, the prevalence associated with never being taught about HIV or AIDS in school increased from 12% in 2007 to 25% in 2011; a potential deficit of the current sexual health education policy.

When comparing the data associated with gender across the three YRBS cycles to the 2007 baseline data, I found that the majority of the sexual risk behaviors were relatively stable with odds ratio intervals overlapping 1 for male students. For female students, there were four sexual risk behaviors with odds ratios below 1, including ever had sex, had sex before age 13, had sex with four or more people, and being currently sexually active. Trenholm, Devaney, Fortson, Clark, Quay and Wheeler (2008), examined the impacts of four abstinence-only education programs on adolescent sexual activity, risks of pregnancy, and STDs. The findings from this study showed no significant impact on teen sexual activity, no differences in rates of unprotected sex, and some impact on knowledge of STDs and perceived effectiveness of condoms and birth control pills. Trenholm et al. (2008) found that youth in the program group were no more

likely than those in the control group to have abstained from sex. The study also showed that if youth in the program group engaged in sex, they had similar numbers of sexual partners as those in the control group. The stability in the rates of Chicago high school youth who engaged in various sexual risk behaviors indicated that there was not a significant association between comprehensive sexual health education and the sexual risk behaviors of high school youth.

Consistent with the literature in support of comprehensive sexual health education or abstinence plus programs, the results from this study showed variances in the influence of comprehensive sexual health education on the sexual risk behaviors of youth. Additionally, expansion of comprehensive sexual health education programs may be warranted to address the multiple confounding factors that influence youth behaviors including race, ethnicity, gender, and socioeconomic status (Benzaken, Palep, & Gill, 2011).

Limitations of the Study

In this study, I used survey research which provided an optimal method for collecting standardized data about the sexual risk behaviors of high school students in relation to the implementation of comprehensive sexual health education as mandated by district policy in Chicago. While the results were representative of high school students in the CPS system, and the sample was large enough to assure the results were valid and generalizable, there were some limitations to this study.

- A secondary data source was used; therefore, there was no control over the development of the instrument used to collect data and the data collection processes.

- The data collected were limited to students who were in attendance at school during the timeframe in which the survey was administered and, therefore, not representative of all persons in the high school age group.
- The data collected were representative of all CPS high schools and did not allow for the comparison of prevalence rates by school or geographic location within CPS. Thus, the differences in curriculums utilized for the instruction of sexual health education may have inadvertently influenced the relationship between the implementation of sexual health education programs and the sexual risk behaviors of high school youth in grades 9–12.
- The sexual health education policy was enacted in 2008; however, it does not take into account the availability of professional development to provide guidance on how to teach comprehensive sexual health education.
- The lack of a specified mandated sexual health education curriculum may have inadvertently influenced the relationship between implementation of sexual health education programs and the sexual risk behaviors of youth in grades 9–12.
- The policy may have been subject to the interpretation of the school administrator (e.g., principal) responsible for approving the curricula.

Recommendations

Although the research found that comprehensive sexual health education positively influenced some sexual risk behaviors of youth, questions and challenges still remain. For example, this study focused on Chicago high school youth in grades 9–12. However, additional research to explore grade as a confounding factor on the sexual risk behaviors of youth is recommended. Data analyses of the sexual risk behaviors of

students as they matriculate through high school may help to inform the enhancements to existing policies and the development of new policies that serve as the foundation for comprehensive sexual health education programs.

I found that the majority of the sexual risk behaviors were relatively stable with odds ratio intervals overlapping 1, when data for all students and male students were analyzed. However, I also found that the sexual risk behaviors for females exhibited a variant pattern after the enactment of the sexual health education policy. Learning style is defined as the manner in which learners most efficiently and effectively perceive, process, store, and recall what they are attempting to learn (Choudhary, Dullo, & Tandon, 2011). The variances in the sexual behaviors among female students suggest potential differences in the learning styles among males and females. Therefore, I recommend that CPS standardize the sexual health education curriculum being used in all high schools to ensure students receive consistent and standardized information. Secondly, it is recommended that consideration be given to the style in which the sexual health education materials are presented to students. Additionally, future research to explore the correlation between a coordinated multi-pronged approach to the delivery the sexual health education curriculum and the sexual risk behaviors of specific subsets of students (e.g., race, ethnicity, and/or gender) is recommended.

Sexual risk behaviors at a young age often have a lasting impact. I found that the implementation of comprehensive sexual health education, influenced some of the behaviors of high school youth. However, the enactment of sexual health policy at the district level does not automatically translate to standardized implementation in schools

throughout the district. Based on the findings from this study, the prevalence of Chicago high school youth who were never taught about AIDS or HIV increased post enactment of CPS' sexual health education policy in 2008. Therefore, I recommend future research be conducted to explore school administrators' (e.g., principals) perspectives, interpretations, and influence on the implementation of mandated comprehensive sexual health education.

Additionally, both the researchers responsible for the most recent national 2015 YRBS data (CDC, 2016) and I found that the majority of sexual risk behaviors remained relatively stable since 1991. However, a quadratic trend showed increases in some sexual risk behaviors (e.g., lack of condom use, nonmedical use of prescription drugs) have occurred (Clayton, Lowry, August, & Jones, 2016; CDC, 2016). I recommended that additional research be conducted to explore the scaling up of comprehensive sexual health education. The scale-up of comprehensive sexual health education includes standards for professional development, enactment of effective local and state policy to guide the implementation of comprehensive sexual health education, and embedding substance use prevention interventions into sexual health curriculum. In this study, I reported a distinct increase in students who reported drinking alcohol or using drugs before their last sexual encounter increased, from 12.5% in 2007 to 18.8% in 2013 among all Chicago high school students.

Implications for Positive Social Change

The outcomes from this study have significant implications for positive social change and indicate the need for legislators and school district leaders to increase support

for the enactment of comprehensive sexual health education policy that will help mitigate the sexual risk behaviors of high school youth through the implementation of standardized comprehensive sexual health education. Additionally, the results from this study will contribute to the existing literature by informing how inequities experienced by youth may influence the sexual risk behaviors they engage in. The health inequities experienced by youth can be addressed as part of a comprehensive health education program that is inclusive of standardized comprehensive sexual health education.

Research such as, the study described in this paper, have significant implications for social change, in its ability to directly inform policies and programs geared towards developing sexually healthy and well-rounded youth and decreasing the sexual risk behaviors that often result in morbidity or mortality. By conducting this study, I was able to demonstrate the correlation between the implementation of comprehensive sexual health education as mandated by established policy and the sexual risk behaviors of high school youth. Furthermore, through this research, I am able to provide additional insight and suggest that there are additional influences, such as, gender and race/ethnicity, among others, that are associated with the sexual risk behaviors of Chicago high school youth. The implications for social change directly inform the enactment of comprehensive sexual health education policy that will help mitigate the sexual risk behaviors of high school youth and promote the implementation of standardized comprehensive sexual health education.

Positive social change supports the implementation of significant alterations over time in behaviors, cultural values, and norms. Comparatively, the theoretical foundation

for this study, salutogenic model, is based on the premise of salutogenesis. Salutogenesis is the study of health development; creating, enhancing, and improving the physical, mental, and social well-being (Becker, Glascoff, & Felts, 2010). The correlation between positive health outcomes at the individual (high school youth), organizational (schools), and population (state and local policy) levels emphasizes the importance of a structured environment and people are encouraged to identify and use the resources available to them to promote the health of the individual, community, and the nation (Mittlemark & Bull, 2013; Lindstrom & Eriksson, 2009).

The practical significance of this study directly aligned with the statistical significance, in that based on the results, I suggest the need to further explore the influences of comprehensive sexual health education on the sexual risk behaviors of youth. Human sexuality is unique to each individual and influenced by several factors, including, socio-economic, cultural, and environmental factors (Benzaken, Palep, & Gill, 2011). Youth are a product of and deeply influenced by their environments (Stranger-Hall & Hall, 2011). Based on the findings of this study, I recommend that local and state legislators and CPS district administrators review the revised sexual health education policy to: (a) ensure adherence with established guidelines that promote the development of well-rounded sexually healthy youth, (b) ensure the policy appropriately responds to health inequities experienced by youth of diverse backgrounds, and (c) ensure the policy supports ongoing assessment and enhancements that address emerging behaviors (e.g., nonprescription drug use) as supported by research.

Conclusion

The literature was replete of studies documenting the effectiveness of school-based sexual health education on helping youth reduce their risk for pregnancy, HIV, and STDs. However, the purpose of this correlational study was to explore the statistical relationship between the consistent implementation of comprehensive sexual health education, before and after the enactment of CPS' sexual health education policy, and the sexual risk behaviors of Chicago high school youth in grades 9–12 via the analysis of YRBS data collected by CPS between 2007 and 2013. Healthy public policy merges together the spectrum of risk factors, protective factors, and promotion factors into a holistic model that is focused on proactivity versus reactivity (Lindstrom & Eriksson, 2009). The emphasis is on health promotion, which ignites control of personal health and determinants of health, thereby informing overall quality of life (Bengt & Eriksson, 2009).

Through my research, I intended to further inform CPS' new sexual health education policy, which was adopted in 2013 and is scheduled to be fully implemented in 2016, and assist lawmakers with further defining public policy to support the standardization of comprehensive sexual health education. Access to comprehensive sexual health education that addresses the socio-cultural, biological, psychological, and spiritual dimensions of sexuality by providing information; exploring feelings, values, and attitudes; and developing communication, decision-making, and critical-thinking skills is perceived to be a right of all people, including adolescents at various ages (SIECUS, 2012). According to Lindstrom & Eriksson (2009), "public health has taken on

the challenge to establish co-operation between different sectors in society" (p. 17) in an effort to make health an issue for society as a whole. Comprehensive sexual health education is a shared responsibility of government, parents, community, school administrators, and teachers and requires the attention of everyone to support the development of sexually healthy youth.

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Appendix A: Youth Risk Behavior Surveillance System Participation History and Data Quality, 1991 – 2013 – High School

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Part ...cipation History & Data Quality, 1991–2013 — High School

The followi ...; tables show the participation status for states (#1), districts (#2), territories (#3), and tribal gover ...ments, (#4) including the quality of the data (weighted or unweighted).

States

High School Youth Risk Behavior Survey, 1991–2013
Participation History and Data Quality by State and Year

● Weighted[1] ○ Unweighted[2] -- Did not participate

States	1991	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	Permission[3]
Alabama	●	●	●	●	●	●	●	●	○	●	●	●	Y
Alaska	--	--	●	--	●	--	●	○	●	●	●	●	Y
Arizona	○	○	○	--	--	--	●	●	●	●	●	●	Y
Arkansas	--	○	●	●	●	●	○	●	●	●	●	●	Y
California	○	○	○	○	○	--	--	--	--	○	○	○	N/A
Colorado	○	○	●	○	○	○	○	●	○	●	●	○	N
Connecticut	--	--	○	●	○	--	○	●	●	●	●	●	Y
Delaware	--	○	○	○	●	●	●	●	●	●	●	●	Y
Florida	○	○	--	○	○	●	●	●	●	●	●	●	N
Georgia	●	●	○	○	○	○	●	●	●	●	●	●	N
Hawaii	○	●	●	●	●	○	○	●	●	●	●	●	N
Idaho	●	●	○	○	○	●	●	●	●	●	●	●	N
Illinois	--	●	●	--	○	○	--	○	●	●	●	●	Y
Indiana	--	--	--	--	--	○	●	●	●	●	●	○	N
Iowa	○	○	○	●	○	○	○	●	●	○	●	○	Y
Kansas	--	○	○	○	--	○	○	●	●	●	●	●	Y
Kentucky	--	○	--	●	○	○	●	●	●	●	●	●	Y
Louisiana	--	●	○	●	○	○	○	--	●	●	●	●	N
Maine	--	○	●	●	○	●	●	●	●	●	●	●	Y
Maryland	○	--	--	--	--	--	--	●	●	●	●	●	Y
Massachusett	--	●	●	●	●	●	●	●	●	●	●	●	N
Michigan	--	○	○	●	●	●	●	●	●	●	●	●	Y

Minnesota	--	--	--	--	--	--	--	--	--	--	--	--	N/A
Mississippi	--	●	●	●	●	●	●	○	●	●	●	●	Y
Missouri	--	○	●	●	●	●	●	●	●	●	○	●	Y
Montana	○	●	●	●	●	●	●	●	●	●	●	●	Y
Nebraska	●	●	○	○	○	○	●	●	○	○	●	●	Y
Nevada	--	●	●	●	●	●	●	●	●	●	○	●	Y
New Hampsh	○	●	●	○	○	○	●	●	●	●	●	●	Y
New Jersey	○	○	●	○	○	●	○	●	○	●	●	●	Y
New Mexico	●	○	○	--	○	--	○	●	●	●	●	●	Y
New York	●	●	--	●	●	○	●	●	●	●	●	●	N
North Carolin	--	●	●	○	--	●	●	●	●	●	●	●	Y
North Dakota	--	--	●	○	●	●	●	●	●	●	●	●	Y
Ohio	--	●	○	●	●	--	●	●	●	○	●	●	N
Oklahoma	--	--	--	--	--	--	●	●	●	●	●	●	Y
Oregon	○	○	○	○	○	--	○	○	○	--	--	--	N/A
Pennsylvania	○	--	--	--	--	--	--	--	--	●	○	○	Y
Rhode Island	--	--	○	●	○	●	●	●	●	●	●	●	Y
South Carolir	●	●	●	●	●	○	○	●	●	●	●	●	Y
South Dakota	●	●	●	●	●	●	●	●	●	●	●	●	Y
Tennessee	○	●	○	○	●	○	●	●	●	●	●	●	Y
Texas	○	○	--	--	○	●	●	●	●	●	●	●	N
Utah	●	●	●	●	●	●	●	●	●	●	●	●	Y
Vermont	--	●	●	●	●	●	●	●	●	●	●	●	N
Virginia	--	○	--	--	--	--	--	--	--	○	●	●	Y
Washington	○	--	--	--	○	--	--	--	--	--	--	--	N/A
West Virginia	--	●	●	●	●	○	●	●	●	●	●	●	Y
Wisconsin	○	●	○	●	●	●	●	●	●	●	●	●	Y
Wyoming	○	○	●	●	●	●	●	●	●	●	●	●	Y
Total Participating	26	40	39	38	41	37	43	44	44	47	47	47	
Total Unweighted	17	18	17	14	19	15	11	4	4	5	4	5	
Total Weighte	9	22	22	24	22	22	32	40	40	42	43	42	
Percent Weighted	36.0	55.0	56.4	63.2	53.7	59.5	74.4	90.9	90.9	89.4	91.5	89.4	

1. Weighted ...ults mean that the overall response rate was at least 60%. The overall response rate is calculated by multiplying th...school response rate times the student response rate. Weighted results are representative of all students in grades 9–12 ...ending public schools in each jurisdiction. With weighted data, it is possible to say, for example, "X% of students in st...e Y never or rarely wore a seat belt when riding in a car driven by someone else."

2. Unweighte...lata represent only the students who completed the survey.

3. Sites that ...ve given CDC permission to distribute their data files to people interested in additional data analyses are

represented b Y". Sites that have not given CDC permission to distribute their data files are represented by "N"; these sites will need to b ontacted directly to arrange access to data files. Sites that do not have any years of weighted data are designated by I/A". See Requesting Data Files (/healthyyouth/yrbs/requestingdata.htm) for more information.

District

High School Youth Risk Behavior Survey, 1991–2013 Participation History and Data Quality by District and Year

● Weighted[1] ○ Unweighted[2] -- Did not participate

Districts	1991	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	Permission[3]
Baltimore, MI	--	--	○	○	○	○	●	●	●	○	○	●	N
Boston, MA	○	●	●	●	●	●	●	●	●	●	●	●	N
Broward County, FL	●	●	●	●	●	●	●	●	●	●	●	●	Y
Charlotte-Mecklenburg, NC	--	--	--	--	--	--	--	●	●	●	●	●	Y
Chicago, IL	●	●	●	●	●	●	●	●	●	●	●	●	Y
Clark County, NV	--	--	--	--	--	--	--	--	--	--	●	--	Y
Dallas, TX	●	●	●	●	●	●	●	●	●	●	●	○	Y
DeKalb Count GA	--	--	--	--	--	--	●	●	●	--	--	--	Y
Denver, CO	--	○	●	--	--	--	--	--	--	--	--	--	N
Detroit, MI	--	--	○	●	●	○	●	●	●	●	●	●	N
District of Columbia	○	●	○	●	●	○	●	●	●	○	●	●	N
Duval County FL	--	--	--	--	--	--	--	--	--	●	●	●	Y
Hillsborough County, FL	--	--	--	--	--	--	●	●	●	--	--	--	N
Houston, TX	--	--	●	●	●	●	○	○	●	○	●	●	N
Jersey City, N	●	●	●	●	--	--	--	--	--	--	--	--	N
Los Angeles,	--	--	○	●	--	●	●	●	●	●	●	●	Y
Memphis, TN	--	--	--	--	--	--	●	●	●	●	●	●	N
Miami-Dade County, FL	●	●	●	●	●	●	●	●	●	●	●	●	Y
Milwaukee, W	--	--	--	--	--	○	●	●	●	●	●	●	Y
New Orleans, LA	--	○	●	●	●	○	●	●	--	--	--	--	Y
New York City NY	○	○	--	●	●	●	●	●	●	●	●	●	N
Newark, NJ	--	--	--	○	--	--	--	--	--	--	--	--	N/A

Orange Coun FL	--	--	--	--	--	●	●	●	●	●	●	●	Y
Palm Beach County, FL	--	--	--	--	●	●	●	●	●	●	●	●	N
Philadelphia,	●	○	●	●	●	●	●	○	●	●	●	●	N
San Bernardi CA	--	--	--	--	○	●	●	●	●	●	●	●	Y
San Diego, C.	●	●	●	●	●	●	●	●	●	●	●	●	Y
San Francisc CA	○	○	○	●	○	●	○	●	●	●	●	●	N
Seattle, WA	--	●	●	--	●	--	--	--	--	●	●	●	Y
Total Participating	11	14	17	17	17	19	22	23	22	23	22	22	
Total Unweighted	4	5	5	2	3	5	2	2	0	3	1	1	
Total Weighte	7	9	12	15	14	14	20	21	22	20	21	21	
Percent Weighted	63.6	64.3	70.6	88.2	82.4	73.7	90.9	91.3	100.0	91.3	95.5	95.5	

1. Weighted r ilts mean that the overall response rate was at least 60%. The overall response rate is calculated by multiplying th chool response rate times the student response rate. Weighted results are representative of all students in grades 9–12 ending public schools in each jurisdiction. With weighted data, it is possible to say, for example, "X% of students in d ct Y never or rarely wore a seat belt when riding in a car driven by someone else."

2. Unweighte ata represent only the students who completed the survey.

3. Sites that e given CDC permission to distribute their data files to people interested in additional data analyses are represented l Y". Sites that have not given CDC permission to distribute their data files are represented by "N"; these sites will need to b ontacted directly to arrange access to data files. Sites that do not have any years of weighted data are designated by /A". See Requesting Data Files (/healthyyouth/yrbs/requestingdata.htm) for more information.

Territor es

High School Youth Risk Behavior Survey, 1991–2013 Participation History and Data Quality by Territory and Year

● Weighted[1] ○ Unweighted[2] -- Did not participate

Territories	1991	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	Permission[3]
American Samoa	--	●	--	●	●	○	○	--	●	--	●	●	N
Guam	--	--	●	●	○	●	○	○	●	○	●	●	Y
Marshall Islands	--	--	○	--	○	○	●	--	●	●	●	--	N
Northern Mariana Islands	--	--	○	○	--	○	●	●	●	●	●	●	N
Palau	--	--	--	--	●	●	●	●	●	●	●	●	Y

Puerto Rico	●	--	●	●	--	○	--	●	--	--	●	●	Y
Virgin Islands	○	●	●	●	--	○	●	--	--	--	--	--	NA
Total Participating	2	2	5	5	4	7	6	4	5	4	6	5	
Total Unweighted	1	0	2	1	2	5	2	1	0	1	0	0	
Total Weighte	1	2	3	4	2	2	4	3	5	3	6	5	
Percent Weighted	50.0	100.0	60.0	80.0	50.0	28.6	66.7	100.0	75.0	100.0	75.0	100.0	

1. Weighted r lts mean that the overall response rate was at least 60%. The overall response rate is calculated by multiplying th chool response rate times the student response rate. Weighted results are representative of all students in grades 9–12 nding public schools in each jurisdiction. With weighted data, it is possible to say, for example, "X% of students in te ory Y never or rarely wore a seat belt when riding in a car driven by someone else."

2. Unweighte ata represent only the students who completed the survey.

3. Sites that e given CDC permission to distribute their data files to people interested in additional data analyses are represented l Y". Sites that have not given CDC permission to distribute their data files are represented by "N"; these sites will need to b ontacted directly to arrange access to data files. Sites that do not have any years of weighted data are designated by /A". See Requesting Data Files (/healthyyouth/yrbs/requestingdata.htm) for more information.

Tribal G vernments

High School Youth Risk Behavior Survey, 1991–2013 Participation History and Data Quality by Tribal Government and Year

● Weighted[1] ○ Unweighted[2] -- Did not participate

Tribal Governmen	1991	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	Permission[3]
Cherokee Nation	--	--	--	--	--	--	--	--	--	○	●	●	N
Winnebago Tribe	--	--	--	--	--	--	--	--	--	●	●	●	N
Total Participating	--	--	--	--	--	--	--	--	--	2	2	2	
Total Unweighted	--	--	--	--	--	--	--	--	--	1	0	0	
Total Weighte	--	--	--	--	--	--	--	--	--	1	2	2	
Percent Weighted	--	--	--	--	--	--	--	--	--	50.0	100.0	100.0	

1. Weighted r lts mean that the overall response rate was at least 60%. The overall response rate is calculated by multiplying th chool response rate times the student response rate. Weighted results are representative of all students in grades 9–12 nding public schools in each jurisdiction. With weighted data, it is possible to say, for example, "X% of students in te ory Y never or rarely wore a seat belt when riding in a car driven by someone else."

2. Unweighte ata represent only the students who completed the survey.

3. Sites that e given CDC permission to distribute their data files to people interested in additional data analyses are represented l Y". Sites that have not given CDC permission to distribute their data files are represented by "N"; these sites will need to b ontacted directly to arrange access to data files. Sites that do not have any years of weighted data are

designated b /A". See Requesting Data Files (/healthyyouth/yrbs/requestingdata.htm) for more information.

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