DISSERTATION

PRIMARY PREVENTION OF ADOLESCENT SEXUAL RISK BEHAVIOR— A SCHOOL BASED MODEL

Submitted by

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY LISA RUE ENTITLED PRIMARY PREVENTION OF ADOLESCENT SEXUAL RISK BEHAVIOR---A SCHOOL BASED MODEL BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

PRIMARY PREVENTION OF ADOLESCENT SEXUAL RISK BEHAVIOR---
A SCHOOL BASED MODEL

In order to improve primary prevention of adolescent sexual activity, the federal government increased funding for abstinence education, therefore, increasing school-based programs that educate adolescents about sexual abstinence. However, little is known about effective delivery models or factors which contribute to initiation, discontinuation, or maintenance of sexual activity.

From 2003 – 2005 a longitudinal study was conducted on the curriculum *WAIT Training* ($N = 807$), to determine whether the course was more effective than a traditional health class, and the relative benefit of two types of teacher delivery—'regular' school teacher or 'specialist' teacher. Qualitative interviews of selected cases provide depth and breadth beyond the simple yes or no aspect of sexual activity.

Both 'specialist' and 'regular' teachers at schools that offered the *WAIT Training* program moved students in a desirable direction on five of six psychological indicators of abstinence. Furthermore, both *WAIT Training* groups improved more than a comparison school not offering the program on two of six short-term indicators.

Follow-up qualitative interviews reveal parenting dynamics that may have contributed to adolescents' decisions to remain sexually abstinent or initiate sexual activity. Consistent with previous research on antecedents of adolescent sexual activity (Kirby, 2001), adolescents whose parents communicated clear boundaries and

expectations regarding relationships maintained abstinence 12 months after receiving the program. Additionally, emotional intelligence (EQ) profiles for each student are included. A recommendation is made regarding the utilization of adolescents' EQ scores to contribute to understanding the behavior of interest and planning appropriate interventions.

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I am thankful for my good friend Dorothy Garrison-Wade, you have been an inspiration and a true friend. And lastly, Dr. Carole Makela and Dr. Donald Cassata for your encouragement to submit my application to graduate school--I will always be grateful!

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CHAPTER 1: INTRODUCTION

Consequences of Adolescent Sexual Activity

Young people who become sexually active are increasing their risk of emotional and psychological injury (Lickona, 1994). Many young people express regrets about sexual activity. According to the nonpartisan agency National Campaign to Prevent Teen Pregnancy (2003), 67% of sexually experienced teens wish they would have waited longer for sex: the majority of that figure (70%) is girls. The Campaign's nationally representative survey provided weighted data from 1,001 young people ages 12 – 19. One young person (age 16) describes her emotionally experience this way:

> I think that every one of us needs a reality check sometimes. It's nice to know that someone out there cares. I have a personal experience that you didn't mention, and there are probably people like me who are out there who need to hear it. I'm 16 years old now and just getting over this thing that happened when I was 13. I still regret it, but I have learned to forgive myself. It was just after 8th grade, and this guy who was two years older than me decided that he "loved" me. At the time, I was very naïve and believed him. For two months he was like Prince Charming. I thought I was in love and had sex with him. All of a sudden he wasn't Prince Charming anymore. After a couple of months, he controlled me, and always told me bad things about myself. He would always make me cry and then decide I was fine and we should have sex. If I resisted, I heard, 'You're stupid.' 'You just don't love me anymore.' 'What, do you not find me attractive?' Well, it was easier to say yes then to take the mental abuse. In the end, when we had sex, I would just turn my head and cry. Sometimes, people don't have to rape you physically, they can rape you mentally. The boyfriend that I had after that for a year and a half was real nice, and we took our time, but sometimes I'd feel guilty and he just couldn't understand why. One day he asked if I had been molested. I guess inside, I feel like a person who has, but there's a difference. See they didn't have any choice so it wasn't their fault. What I feel is my fault because I said "yes." I think that girls in situations like that need to know that these guys have problems that are not their fault, and they don't have to be mentally abused. I had to learn that the hard way. Thank you for talking to us. And you did make a great impact on me (Socia, 1998, p. 58).

Young men are also susceptible to the negative emotional outcomes of premature sexual relationships. While conducting parent education seminars, the most frequent question asked by parents of middle school students is, "How do I protect my son from those aggressive girls?" (personal communication, 1998). When asked the question at a recent *WAIT Training* class, "Who advises you to wait for sex?" an observant young man responded, "My sexually active friends; they said that sex ruined the relationship." One young man had to defend himself in the locker room because his teammates on the hockey team called him "gay" because he was a virgin (personal communication, 1983). During the middle school years, developmental differences between girls and boys are dramatic. A common observation is that boys are content with sports and other activities with their friends. Some middle school girls, however, start acting upon the expectations communicated through the media with respect to their perceived role of being "sexy." Many middle school females feel strong pressure to weave their identity together with boyfriend status. Identity development and emotions are should be treated with care at any age. Both males and females can experience life long emotional scarring from their early sexual experiences.

Two-thirds of all sexually transmitted diseases (STDs) occur in people who are 25 years of age or younger (American Social Health Association, 2005). Each year, 3 million teens contract an STD; overall, one-fourth of sexually active teens have been afflicted (Alan Guttmacher Institute, 1994). No cure exists for viral sexually transmitted diseases such as the human immunodeficiency virus (HIV) and herpes, both with lifelong physical and emotional negative effects. Other common viral STDs are the Human Papillomavirus (HPV) -- the leading viral STD -- with 5.5 million cases reported each

year (American Social Health Association, 2005), and the cause of nearly all cases of cervical cancer that kills approximately 4,100 women per year (American Cancer Society, 2003).

The socioeconomic and personal costs of adolescent sexual activity and out-of-wedlock childbearing are a concern to our nation. Of all births in 2002, 34% were to unmarried women, up from 32% in 1996 (Martin et al., 2003; Ventura & Bachrach, 2000). Females under 15 years old experience about 30,000 pregnancies each year (Centers for Disease Control, 2001). According to the Colorado Children's Campaign (2005), the Colorado birth rate for teens under 18 years old was 24.3 per 1000 girls in the year 2003. Hispanic adolescents were over-represented in births to teen mothers. For example, they comprised 65% of all births to women under the age of 18 years old in Boulder County (Colorado Department of Public Health and Environment, 2000).

Teenage pregnancy remains a serious national issue. Teenage mothers are less likely to complete school, more likely to be single parents, and are more likely to be impoverished. Their children often have poorer health, lower cognitive development, more behavioral problems, and often become teen parents themselves later (Child Trends, 1995).

Some associate the negative emotional impact as well as the negative consequences of adolescent sex with cultural and institutional forces in the United States (Schalet, 2004). Base on interviews with 130 parent and youth participants in the United States and the Netherlands, Schalet, argued that American parents "dramatize" teen sexuality and Dutch parents "normalize" teen sexual development. She claims this normalization combined with comprehensive sexuality education directly contributes to lower rates of STDs, abortion, and adolescent pregnancy in the Netherlands. The article neglects to

mention differences between the United States and the Netherlands with respect to childhood sexual abuse, poverty, divorce rates, and the relative racial and ethnic homogeneity of the Netherlands as compared to the United States. These differences can contribute to a decrease in parent and child connectedness known to increase adolescent sexual risk (Blum & Rinehart, 1997; Boyer & Fine, 1992).

Problem Statement

The purpose of this study is to measure the impact of a school-based primary prevention curriculum on delaying the onset of sexual behavior of adolescents' grades 9 to 11 from participating school districts in Colorado. The study will assess constructs related to sexual behavior in adolescents, such as affirmation of abstinence, future orientation, personal efficacy, independence from peer influence, and justification of sex (Rue, 2003; U.S. Department of Health and Human Services, 1992). In addition, the study will assess short-term behavioral intentions toward sexual activity as well as behavior outcomes 12 months following the intervention. Students in participating school districts in Colorado that offer the character-based sexuality curriculum, called *WAIT Training* (Krauth, 2003), were compared to students in a program that does not offer the curriculum.

After the 12-month follow-up survey was analyzed, selected cases that moved in both a desirable and undesirable direction were identified from the sample. A qualitative analysis was conducted for these students. The study of selected cases reflecting the greatest pre - to post-test differences as well as sexual behavior can assist prevention programs and schools in understanding the effectiveness of the program. This

information can be helpful in order to make program adjustments to better meet the needs of all students.

Significance of the Study

Primary prevention initiatives, sometimes referred to as abstinence education, have experienced significant funding increases since the mid 1990s (Landry, Kaeser, & Richards, 1999). However, the effectiveness of these programs remains in question because only four evaluations of abstinence or character-based programs have been published (Kirby, 2001; Lerner, 2005). This study describes how the use of one character-based sexuality curriculum, known as *WAIT Training*, contributes to the delay of sexual debut in adolescents and to the reduction of sexual activity. The impact of the curriculum is described by quantifying outcomes of interest, specifically pre - to post test mean scores on mediating variables of behavioral intention, pre - to post test and follow-up risk composite scores, and pre - to follow-up mean scores. Qualitative interviews provide examples from student participants who moved both in the desirable and undesirable direction during the program and at the 12-month follow-up. The prevalence of sexualized messages throughout the culture, combined with peer pressure, leaves little consistent support for teens to remain abstinent until marriage or to postpone the onset of sexual intercourse until they are able to assume the responsibilities and risks for their own sexual choices. This study contributes to the body of knowledge in order to assist schools and communities interested in conducting primary prevention and creating authoritative communities (see Table 7).

Hypotheses

1. Adolescents who receive a (9-week or 15 day) character-based sexuality curriculum (*WAIT Training*) from a 'specialist' or 'regular' teacher change more positively than students not receiving the curriculum with respect to correlates of behavioral intentions toward sex.
2. Adolescents who receive character-based sexuality education (*WAIT Training*) have lower risk than students in the comparison group (non-*WAIT Training*).

Qualitative Research Questions

1. What are the characteristics of students who had strong gains between the pre and post-test and maintained sexual abstinence after 12 months?
2. What are the characteristics of students who did not move or moved away from sexual abstinence from pre to post test but maintained sexual abstinence after 12 months?
3. What are the characteristics of students who had strong gains between the pre and post-test, but did not maintain sexual abstinence after 12 months?
4. What are the characteristics of students who moved in an undesirable direction away from sexual abstinence between the pre and post test, but did not maintain sexual abstinence after 12 months?

Application

The results of this study assist health educators and practitioners' with greater understanding about effective implementation of primary prevention activities designed to reduce adolescent sexual activity and out-of-wedlock childbearing because it meets the rigorous demands of evaluation outlined in the No Child Left Behind Act of 2001.

Schools benefit from programs that assist with academic achievement by reducing risk taking behaviors that may contribute to drop out rates and lower academic achievement. Berkowitz and Bier (2004) documented an association between character education and academic achievement. It is likely that character-based sexuality education will complement the goals for academic achievement of parents and schools.

Likewise, the National Marriage Project (2000) found that most young people have goals that include high expectations for intimacy, connectedness, and longevity of marriage. However, the current mating and dating culture is doing little to foster realistic attainment of these goals. This study may assist practitioners to design programs to counter unhealthy dating practices.

Definition of Terms

The prevention field related to adolescent sexuality education is multifaceted and complex. A list of terms is provided in Table 1 to clarify to the reader what terms will be referred to in this study. The main curriculum definitions are followed by subcategories for each paradigm.

Researcher's Reflection

This researcher spent eight years teaching in public schools at the elementary, secondary, and vocational settings. During this time, I taught the traditional comprehensive sexuality education component. Over the last 11 years, I developed programs, curricula, and interventions with the intent to improve primary prevention activities in the schools.

Experiencing two philosophical sides of this complex issue has provided keen insight into how potentially to improve the primary prevention efforts of public school

sexuality education. The researcher's biases are toward the need to implement better primary prevention strategies. Working on several character-based sexuality education grants and considering this researcher's close ties to new funding supporting abstinence education, personal financial gain may be in question. However, no personal financial benefit exists for the outcome of this program evaluation. This researcher is independent from the *WAIT Training* curriculum that is administered through the Abstinence and Relationship Training Center in Denver, Colorado. [1]

[1] The data collected for this project was supported by grant number 1HID MC 00459-02 from the Department of Health and Human Services, Maternal and Child Health Bureau. Its contents are solely the responsibility of the author and do not necessarily represent the official views of the Department of Health and Human Services. This research was also supported in part by the Anschutz Foundation and from a contract from the Adams County Department of Social Services, TANF initiative.

Table 1

Terms Related to Adolescent Sexuality Education

Comprehensive Sexuality Education: K-12 sexuality education that adheres to the SIECUS *Guidelines for Comprehensive Sexuality Education.* Emphasizes contraceptive skills and education and includes some information about abstinence.

1. **Condom Education**: Curriculum of which the main purpose is to reduce the transmission of sexually transmitted infections through consistent and correct condom use.

2. **Teen Pregnancy Prevention**: Curriculum and education where the main purpose is the reduction of adolescent pregnancy through the provision and distribution of contraceptives and other reproductive health services. May be school based in health clinics or curriculum.

3. **Abstinence Plus Sexuality Education**- Curriculum that adheres to the *Guidelines for Comprehensive Sexuality Education.* Emphasizes abstinence until the adolescent feels they are ready for sex and provides skills-based contraceptive education.

Primary Prevention: Forestalls the onset of illness or injury by addressing systemic environmental, familial, or generational conditions that increase the likelihood of risky sexual behaviors.

1. **Character-based Sexuality Education**: Adheres to the *Guidelines for Sexuality and Character Education.* Emphasizes abstinence until marriage and healthy relationship skills through character development for school-aged children. Includes factual information about contraceptives either in the curriculum or as an additional component of a broader health curriculum.

2. **Abstinence Only Sexuality Education**: Curriculum that adheres to the *Guidelines for Sexuality and Character Education.* Emphasizes abstinence until marriage, relationship and character training for school-aged children. Does not include contraceptive information.

CHAPTER 2: REVIEW OF LITERATURE

What are the best ways to evaluate prevention program targeting adolescent sexual risk behavior? According to Bunge (1996), science-based approaches, also known as 'positivist' approaches, are accused of being a tool of male, racial, or class domination. Feminist researchers Cook and Fonow (as cited in Boxer, 1998) claim it is impossible to be totally objective and that the subject and the object of the research cannot be separated. Positivists argue (especially with respect to school-based health prevention efforts) that post-modern methods of evaluation violate the most basic premise of empirical research and make no serious attempt at hypothesis testing (Gorman, 2003). Researchers generally agree that we can work toward eliminating bias and partially succeed. Still others support the use of multiple methods known as triangulation in order to strengthen validity of findings (Rossi, Freeman & Lipsey, 1999). Researchers and program evaluators should take all perspectives into account when making decisions about the research design. Conducting a thorough literature review can assist with designing a quality evaluation or research project.

For this literature review, a brief overview of sexuality education is provided. The history and development of sexuality education present frameworks important to the two paradigms reviewed in this paper and distinguish the foundations of character-based sexuality education. A thorough literature review of the theoretical frameworks governing character-based sexuality education and primary prevention is provided, followed by a review of empirical studies in the field. Key concepts from curricular

domains are compared. New domains that represent an Integrated Sexual Health (ISH) model will be reviewed. The following areas are addressed in the ISH model: women; adolescents; risk behavior complex; sexual victimization; marriage and marital sexuality; character, community and culture; as well as the emotional, psychological and spiritual dimensions of sex; nonmarital pregnancy; economic impact; and sexually transmitted diseases. The empirical studies are organized by their primary outcomes of interest. Condom and HIV prevention studies are reviewed first, and then studies relating to programs meeting the *Guidelines for Comprehensive Sexuality Education* are reviewed, followed by studies of abstinence programs.

School-based sexuality education is a common practice in the United States (Darroch, Laudry & Singh, 2000). To fully understand school-based sexuality education issues, a brief historical overview of sexuality education will be presented. Thirty years of sexuality education provides valuable insights into how strategies have evolved for this specialized area of instruction.

Historical Overview of School-Based Sexuality Education

From 1948 – 1953, Kinsey published his groundbreaking research on human sexuality (Pomeroy, 1972). The Sexuality Information and Education Council of the United States (SIECUS) was established in 1964 to create sexuality education curriculum based on Kinsey's research. Simultaneously, the second wave of feminism (1960s & 1970s), the foundations of the 'feminist sexual politic' were established. This new thought challenged sexual stereotypes and liberated women with the introduction of birth control and abortion rights (hooks, 2000). Ironically, during the same time period the founder of *Playboy* magazine, Hugh Hefner, made an initial grant to establish the office

of research services for SIECUS (Playboy Foundation, personal communication, August, 1993). Four generations of sexuality curriculum have been developed and studied since the 1970s, with mixed results.

The impact of the HIV/AIDS crisis rocked our country in the early 1980s. Discourse focused on the role of school-based sex education and whether or not the promotion of condoms or abstinence would be the best policy. The curriculum debate occurred at the school and community level typically with local school boards. Sexuality education is primarily about reducing the consequences of teen sex such as pregnancy, HIV, and other sexually transmitted diseases (STDs). Therefore, many argued for condom promotion as a first line of defense (Coburn, 1994; Michelman, 1995). Others in the community believed that because of the destructive nature of dual epidemics of nonmarital pregnancy and STDs (including HIV/AIDS), school-based sexuality education should promote abstinence as the primary message to school-aged children (Bussey, 1998; Funderburk, 1998; McIlhaney, 1996). According to the Kaiser Family Foundation (2002), 48% of principals said the topic of sex education had been discussed or debated, and 58% reported no change in the curriculum as a result.

Other professional health and sex educators have a broader goal for sexuality education that includes a K -12 comprehensive model with the goals of creating sexually healthy adults (SIECUS, 1991; 1996). A curriculum focused on the sexually healthy adult, according to SIECUS (2004), meets guidelines in six domains: (1) human development, (2) relationships, (3) personal skills, (4) sexual behavior, (5) sexual health, and (6) society and culture. A sexually healthy adult should be able to understand how sexuality interacts with each domain and choose to behave according. In 1991, SIECUS

created guidelines for comprehensive sexuality education (SIECUS, 1991; 1996) in order to guide curriculum developers. These guidelines provided a framework for curriculum development that mirrored the goals and priorities of SIECUS. General characteristics of the SIECUS *Guidelines for Comprehensive Sexuality Education* include neutrality of gender differences between males and females, advocacy for reproductive information and choices, and nondirective with respect to values. A nondirective philosophy in both curricula and facilitation presents sexual values equally with no one value or choice being better or worse than other values and choices.

The HIV/AIDS pandemic forced our nation to look critically at the methods and role of sexuality education as a vehicle to impart prevention strategies. Kinsey's unscientific sampling techniques, as well as an absence of informed consent from participants in his studies, caused some researchers to question the validity of the theories derived from the original research as well as how those theories negatively affected our culture (Reisman & Eichel, 1990). The groundbreaking studies of Alfred Kinsey failed to include cautionary limitations about the potential cultural devastation of sexually transmitted diseases, emotional and psychological impact of relationships without commitment, and nonmarital pregnancy (Kinsey, Pomeroy, Martin & Gebhard, 1948; 1954). However, prominent feminists like bell hooks (2000) retrospectively identified the oversight:

> In the late '60s and '70s females were often encouraged to make synonymous sexual freedom and sexual promiscuity. In those days and to some extent in the present most heterosexual men saw and see a sexually liberated female as the one who would be or will be sexual with the least amount of fuss, i.e., asserting no demands, particularly emotional ones. And a large number of heterosexual feminists had the same misguided notions because they were patterning their behavior on the model provided by patriarchal males. *However it did not take women long to realize that sexual*

> *promiscuity and sexual liberation were not one and the same* [italics added]. (p. 86-87)

She went on to say, "Irrespective of their sexual preference women who suffered emotionally by equating the two were disillusioned about sex (p. 87)."

Curricular Domains of Comprehensive Sexuality Education

SIECUS's approach to comprehensive sexuality identifies six key concepts related to sexual health. These concepts are outlined in *The Guidelines for Comprehensive Sexuality Education* (1996) (see Table 2). It is important to note that the guidelines are used as a starting point or an evaluation tool for new sexuality programs and accentuate a 'nondirective' approach for both the curricula and facilitator. Nondirective methods emphasize individual values clarification without guidance from the adult facilitator as to a "best choice" for adolescents.

Curricular Domains of Primary Prevention

During the early 1990s, the Medical Institute for Sexual Health was founded by Dr. Joe McIlhaney, Jr. Concerns about the trends he observed in his 30-year obstetrics and gynecology practice motivated him to become one of the most vocal critics of modern sex education strategies grounded within the Kinseyan structure. From 1960 to 1990, Dr. McIlhaney's practice changed from treating mostly healthy, married, pregnant women to mostly unhealthy, unmarried, pregnant women (McIlhaney, 1997). He gave up a lucrative private practice to start the Medical Institute for Sexual Health because of his concern about the trends he experienced in his practice and his desire to provide an alternative model of sexuality education. The Institute developed the *National Guidelines for Sexuality and Character Education* in 1995. These guidelines fused character education; factual information about contraceptives, biology and reproduction;

and the promotion of abstinence, relationship skills and marriage education for school aged children (The Medical Institute For Sexual Health, 1995).

Table 2

Guidelines for Comprehensive Sexuality Education

Key Concept 1: Human Development Human development is characterized by the interrelationship between physical, emotional, social and intellectual growth.
Key Concept 2: Relationships Relationships play a central role throughout our lives.
Key Concept 3: Personal Skills Healthy sexuality requires the development and use of specific personal and interpersonal skills.
Key Concept 4: Sexual Behavior Sexuality is central to being human and individuals express their sexuality in a variety of ways.
Key Concept 5: Sexual Health The promotion of sexual health requires specific information and attitudes to avoid unwanted consequences of sexual behavior.
Key Concept 6: Society and Culture Social and cultural environments shape the way individuals learn about and express their sexuality.

Source: SIECUS, 1996.

Parents are a powerful force at the grassroots level of communities and public education because they can influence school board policy. Most parents oppose the methods touted by Kinsey and promoted by SIECUS (Zogby, 2003). A random sample of 1,245 parents of children ages 5 to 18 were interviewed by the Zogby organization about curriculum from *Guidelines for Comprehensive Sexuality Education* and from the

National Guidelines for Sexuality and Character Education. Questions in the survey were derived directly from comprehensive sex education curricula or the *SIECUS Guidelines*, as well as questions asked verbatim from portions of the *National Guidelines for Sexuality and Character Education.* Parents were twice as likely to approve the character-based sexuality guidelines compared to the comprehensive sexuality guidelines.

A study by the National Marriage Project (2000) advocated that other goals pertaining to the formation of intimate relationships should be addressed by sex education. These goals include preparing young people to successfully attain their expectations of intimacy, connectedness, and longevity of marriage. The Rutgers report outlined how young adults aspire to reducing divorce and increasing their relationship success. However, the current mating and dating culture is doing little to support these goals.

In contrast to the SIECUS approach, the Medical Institute (MI) has created a new approach to respond to the high rates of sexually transmitted diseases, out-of-wedlock childbearing, and psychosocial and economic impacts of premature initiation of sexual activity. Primary prevention programs are specifically interested in reducing adolescent sexual activity, rather than the consequences of teen sex. This approach can be an option for communities to consider when decisions are made with respect to primary prevention approaches.

The *Guidelines for Sexuality and Character Education* also has six key concepts (see Table 3). These guidelines emphasize the need for a 'directive approach' with adolescents. The underlying assumption is that due to multiple and serious consequences to both individuals and society at large, it is the responsibility of adults to guide and

support young people to make the 'optimal' choice. Lack of guidance from adults is viewed as an irresponsible public health response to the associated epidemics related to adolescent sexual activity.

Table 3

Key Concepts for Sexuality and Character Education

Key Concept 1: Human Development Respects the value of human life. Respects one's body and the bodies of others. Understands reproductive health is maintained through healthy habits practiced throughout life.
Key Concept 2: Relationships/ Family Recognizes that love is a daily decision not based on feelings. Expresses love in ways that are in the best interests of self and others. Understands differences between healthy and unhealthy relationships.
Key Concept 3: Character Formation Affirms and identifies value and dignity of every person. Develops positive traits of good character such as good judgment, courage, fairness and self-respect.
Key Concept 4: Sexual Behavior Expresses one's sexuality in ways that truly respect self and others. Distinguishes between needs and desires. Develops nonphysical ways of expressing intimacy.
Key Concept 5: Sexual Health Affirms that sexual health depends on an individual's will and habits. Avoids contracting an STD by practicing and on regaining self-control. Abstain from premarital sex to maximize physical and emotional well-being. Refrain from sexual abuse or harassment of others and deal appropriately with abusive or harassing situations.
Key Concept 6: Media and Society Distinguishes between healthy and unhealthy messages. Practices selective viewing of television and avoidance of all pornographic material.

Source: The Medical Institute for Sexual Health, 1995.

A comparison of developmental messages for each concept is outlined in Table 4 to 6. These messages on human development are taken directly from the guidelines for

each model. The youngest and oldest age groups provide an example of the scope and focus of each model.

Table 4

A Comparison of Developmental Messages from SIECUS and the Medical Institute Ages 5-8.

SIECUS (Original)	SIECUS (Revised 1996)	The Medical Institute
1. Boys have penis, scrotum and testicles. 2. Girls and women have a vulva, clitoris, vagina, uterus, and ovaries 3. Both boys and girls have body parts that feel good when touched. 4. Sexual intercourse occurs when a man and a woman place the penis inside the vagina. 5. Some men and women are homosexual, which means they will be attracted to and fall in love with someone of the same gender.	1. Each body part has a correct name and function. 2. A person's genitals, reproductive organs, and genes determine whether a person is male or female. 3. Both boys and girls have body parts that feel good when touched. 4. Boys have penis, scrotum and testicles. 5. Girls and women have a vulva, clitoris, vagina, uterus, and ovaries.	1. Girls and boys need to care for their bodies. 2. Human babies develop inside their mothers. 3. Human babies are best cared for by loving and mature parents with support from other responsible adults. 4. Boys and girls are similar in some ways and different in others. 5. Throughout childhood, a person grows intellectually, emotionally, socially, physically, spiritually, and morally.

Source: SIECUS, 1996; The Medical Institute, 1999.

Table 5

A Comparison of Developmental Messages from SIECUS and the Medical Institute Ages 9 – 12

SIECUS (Original)	SIECUS (Revised 1996)	The Medical Institute
1. Sexual intercourse provides pleasure. 2. There are ways to have genital intercourse without causing pregnancy. 3. Sexual orientation refers to whether a person is heterosexual, homosexual or bisexual. 4. Homosexual love relationships can be as fulfilling as heterosexual relationships.	1. The maturation of external and internal reproductive organs occurs during puberty. 2. Sexual intercourse provides pleasure. 3. Whenever vaginal intercourse occurs, it is possible for the woman to become pregnant. 4. The union of the sperm and the egg is called conception or fertilization. 5. The fetus begins to develop at fertilization. 6. During the pregnancy, the fetus develops during a 40 week cycle that ends at birth. 7. Sperm determine the sex of the baby. Contraception can prevent pregnancy.	1. Both human beings and animals have bodies; however human beings have capabilities, such as the ability to judge right from wrong. 2. Physical and hormonal changes during puberty can affect our emotions and our relationships with others. 3. Boys and girls have many different and similar strengths, talents and goals in life. 4. Each person develops through the same basic developmental stages, but at different rates.

Source: SIECUS, 1996; The Medical Institute, 1999.

Table 6

A Comparison of Developmental Messages from SIECUS and the Medical Institute Ages 16 – 18

SIECUS (Original)	SIECUS (Revised 1996)	The Medical Institute
1. Most people enjoy giving and receiving pleasure. 2. The telephone number of the gay and lesbian center in this community is _____.	1. Sexual differentiation occurs early in prenatal development. 2. Chromosomes determine whether a developing fetus will be male or female. 3. For both sexes, hormones influence growth and development as well as sexual and reproductive function. 4. A woman's ability to reproduce ceases after menopause; a man can usually reproduce all of his life. 5. Most people enjoy giving and receiving pleasure.	1. As a society, we must promote healthy behaviors and lifestyles for everyone. 2. An unmarried teenager who practices abstinence dramatically decreases the chance of damaging his or her reproductive system.

Source: SIECUS, 1996; The Medical Institute, 1999.

In summary, Comprehensive Sexuality Education programs are specifically interested in reducing the *consequences* of sexual activity for both adolescents and adults. Primary prevention programs are interested in promoting *risk avoidance* strategies intended to delay the onset of sexual activity as long as possible, ideally until marriage. The primary prevention model underscores the need for new school-based strategies of primary prevention because of the severe societal impacts related to early onset of adolescent sexual activity.

Ten Critical Sociological Issues

This new paradigm addresses 10 critical issues confronting the United States. Known as Integrated Sexual Health (ISH), the Medical Institute believes it is the key to advancing health, hope, and positive social energy for our culture. The Institute does this by addressing each of these domains: women; risk behavior complex; adolescents; sexual victimization; marriage and marital sexuality; character, community and culture; emotional, psychological and spiritual dimensions of sex; nonmarital pregnancy; economic impact; and sexually transmitted diseases (Medical Institute, 2004). The cultural impact of adolescent sexual behavior is a holistic vision of sexual health, not simply a risk-reduction or disease-prevention strategy. The ISH model incorporates 10 critical domains that require active intervention strategies beyond simply a curriculum for schools. Its successful implementation requires the design described as "authoritative communities" with a focus on generational outcomes (Institute for American Values, 2003). School-based interventions provide one component of the broader public health and community initiative.

Women

Women are disproportionately affected by the epidemic of STDs. Women acquire disease easier because of the physiological structure of their reproductive system. According to the Centers for Disease Control (CDC), 35% of all new HIV infections in the U.S. are acquired through heterosexual transmission, and 84% percent of heterosexually acquired HIV infections involved nonHispanic Blacks or Hispanics. Of the cases transmitted through heterosexual contact, 64% occurred in females (MMWR, 2004). Chlamydia silently devastates the reproductive organs of women. The CDC

reports 2.8 million new cases of chlamydia annually. Because the disease has no symptoms, women are easily reinfected by their partners. A woman's likelihood of sterility increases by 50% if she contracts the infection a second time (Centers for Disease Control, 2004). Thus, the issue becomes the effectiveness of the curricula to address the needs of women in order to reduce the likelihood of disease to reproductive organs and protection of future fertility.

Risk Behavior Complex

The earlier adolescents begin to have sex, the more likely it is that they will be involved with other unhealthy behaviors (Meeker, 2002; The National Campaign to Prevent Teen Pregnancy, 2003; Orr, Beiter & Ingersol, 1991). Young sexually experienced teens are more likely to smoke, drink, and use illegal drugs (The National Campaign to Prevent Teen Pregnancy, 2003). Risk behaviors typically cluster together. If one risk behavior exists, the adolescent probably participates in other risk behaviors (The National Campaign to Prevent Teen Pregnancy, 2003). Therefore, a primary goal for school-based prevention programs and curricula is the effective promotion and maintenance of sexual abstinence for youth. Promotion of what works for children requires an understanding of what makes primary prevention efforts effective. School administrators and personnel need to have a thorough understanding of best practices and strategies to effectively implement programs.

Adolescents

Social messages make adolescents susceptible to negative consequences of premature sexual activity. Increasing pressure to become sexualized by society is fostered through repeated exposure to sexual images in media and society including

risqué clothing for 10 – 12 year olds. The trends set unhealthy standards for preadolescents. Immature physical development also increases susceptibility to adverse consequences of early sexual involvement. The differences in anatomy for adolescent girls make them far more vulnerable to infection than adult women. For instance, the cells covering the cervix of a young adolescent or teenager are physiologically different and more susceptible to infections (Meeker, 2002). Premature sexual involvement can negatively affect healthy emotional and sexual development (Medical Institute, 2004; Meeker, 2002).

Can adolescents process information about sexuality like adults? Recent research indicates that the prefrontal lobes of the human brain are not fully developed until the midtwenties (Brownlee, 1999; Calvin, 1996; Institute for American Values, 2003; King, 1997; Sowell, Thompson, Holmes, Jernigan, & Toga., 1999). This part of the brain is responsible for mature judgment decisions. The issue, therefore, becomes how to design and implement prevention curricula that are directive in nature to better assist young people in making the best health choice – sexual abstinence.

Sexual Victimization

A high correlation exists between unwanted and undesired sexual perpetration and teen pregnancy (Boyer & Fine, 1992; Fiscella, Kitzman, Cole, Sidorak & Olds, 1998). This relation is associated with sexual dysfunction as well as compulsive sexual behavior in adulthood (Medical Institute, 2004). Men past school-age father two thirds of the children born to school-age mothers. These men are on average 4.2 years older than the senior high mothers and 6.7 years older than the junior high mothers (Males & Chew, 1996). Another contributing factor to sexualization of children is a marketing strategy

known as "age compression" that encourages early sexual involvement (Medical Institute, 2004). Therefore, prevention programs that incorporate sexual boundary setting, sexual refusal skills, relationship skills, as well as necessary therapeutic support for youth experiencing past or current sexual trauma, are responsibly responding to this domain. From the community perspective, stricter law enforcement and follow-up of adult sexual perpetrators need to occur simultaneously with curriculum implementation.

Marriage and Marital Sexuality

A study from the Marriage Project at Rutgers University found that the current mating and dating culture is inadequate to help young people reach their goals for intimacy. Many young adults express their desire to establish long-standing, intimate, and successful marriage relationships. However, they are not receiving the education and support to help them reach their goals (National Marriage Project, 2000). Prevention programs responding to this domain are designed to meet goals for emotional intimacy, compatibility, and longevity of marriage. Healthy marriage is critical to the future health and wellness of children (Institute for American Values, 2003).

Character, Community, and Culture

All cultures promote boundaries around sexual behavior that assist to prevent sexual chaos, such as rampant sexually transmitted diseases. These boundaries also assist in preventing negative social energy such as decreased socio-economic outcomes linked to nonmarital pregnancy (Maynard, 1997). Disconnected and unhealthy adult marital and family relationships contribute to this trend as well (Horn, 2003; Nelson, Clark & Acs, 2001). Alternatively, healthy marriages and families are linked to positive social energy and create safety for childrearing. Because children benefit from the health of this

foundational societal unit, community, social and sexual public health providers are challenged to develop and implement programs emphasizing the importance of healthy marriages and families.

Emotional, Psychological and Spiritual Dimensions of Sex

Healthy sexuality encompasses the physical, psychological, and spiritual dimensions. The dimensions work together to create a sexually whole person. Current youth culture indicators are troubling because they contribute to disconnecting the physical side of sex from the emotional side of sex. Adolescents are often pressured into sexual activity; this pressure increases the likelihood of emotional scarring. For example, the majority of sexually active teens (67%) wish they had waited longer before beginning to have sex (National Campaign to Prevent Teen Pregnancy, 2003). School-based sexuality education should combine facts about biology and reproduction with ideals for safe and fulfilling sexual expression.

A recent analysis of the National Longitudinal Survey of Adolescent Health, Wave II data (N = 6,500) found that when compared to teens who are not sexually active, teenaged boys and girls who are sexually active are significantly more likely to be depressed and attempt suicide (Hallfors, Waller, Ford, & Halpern., 2004; Rector, Johnson, & Noyes, 2003). This correlation does not mean that adolescent sexual activity causes depression; it does mean that depression and sexual activity are a co-occurring risks. Providing therapeutic support to prevention education programs and curricula is one possible response to this domain.

Nonmarital Pregnancy

Nonmarital pregnancy has devastating consequences for most women. For teens, it reduces the likelihood of fulfilled personal, educational and economic potential for both the mother and the child (Maynard, 1997). Fatherlessness (non-marriage) has increased substantially over the past three decades, with birth rates among unmarried women increasing from about 20% in 1980 to nearly 35% in 1999 (Ventura & Bachrach, 2000). Prevention programs and curriculum should research and develop effective strategies to reduce nonmarital pregnancy by promoting the importance of healthy marriage to child welfare and development.

Economic Impact

Paying for the epidemic related to adolescent sexual behavior and out-of-wedlock child bearing is a problem. All levels of government, corporations, and small business are paying billions of dollars for the treatment of sexually transmitted diseases including infertility treatment, cervical cancer, and HIV and AIDS (Chesson, Blandford, Gift, Tau & Irwin, 2004). Absenteeism and lower educational achievement have exponential effects on our economy. The estimated direct and indirect costs of adolescent pregnancy in the United States are approximately 29 billion dollars annually (Maynard, 1997). Responsive communities implementing an Integrated Sexual Health model are attempting to reduce the cost of this epidemic by increasing primary prevention activities.

Sexually Transmitted Diseases

Every day 8,000 teenagers in the United States become infected with a sexually transmitted disease (Meeker, 2002). The physical suffering and economic costs for treatment of sexually transmitted diseases continue to burden the social energy of our

country. According to the Kaiser Family Foundation (1998), 68 million Americans have a sexually transmitted disease. Genital herpes accounts for 45 million. Human papilloma virus has the highest incidence of new infections annually at 5.5 million. Although condoms provide the best yet, not complete transmission reduction for HIV and gonorrhea, clinical evidence supporting the premise that condoms are effective in reducing the transmission of herpes, human papilloma virus, or chlamydia is limited -- all of which have a higher incidence and prevalence than HIV (Cale & Stone, 1992; National Institute of Allergy and Infectious Disease, 2001). Individuals infected with STDs are 2 – 5 times more likely than uninfected individuals to acquire HIV (MMWR, 2003).

In summary, outcome variables that are of most interest to the ISH model must encompass elements of all the critical domains. The ISH model outcome variables of most interest are delayed onset of sexual activity, reduction in the frequency or recency of sex for sexually active adolescents, and a reduction in the number of partners. These outcome variables are directly linked to improvement in all of the ISH domains. For example, if adolescents delay the onset of sexual intercourse until marriage, not only are the economic implications better for the individuals and their future children they are better for society (Gallagher & Waite, 2000; Maynard, 1997). Achievement of higher education is correlated with better economic outcomes and reduced dependence on the government for basic living support (Maynard). Simultaneously, the delayed onset of intercourse significantly reduces the likelihood of contracting a sexually transmitted disease (Rosenthal, Biro, Succop, Cohen & Stanberry, 1994) as well as reducing multiple risk behaviors such as tobacco, alcohol and other drug use (Meeker, 2002; Orr, Beiter & Ingersol, 1991). It also increases the opportunity to develop decision making and

judgment skills as the adolescent brain completes development (Brownlee, 1999; Calvin, 1996; King, 1997; Sowell, Thompson, Holmes, Jernigan, & Toga, 1999). Better judgment and decision making capacity are likely to have a positive influence with respect to decisions about intimate long-term adult relationships. Stanley sums up the goals of Integrated Sexual Health by saying:

> With regard to 'sex education,' I think we have persisted too long as a society in teaching of sexuality as a physiological entity, quite apart from the sociological and relational context in which it occurs. This has led to a generation of youth who may know more than their parents about the nuts and bolts of sex, but who know less than their grandparents about the relationship context surrounding sexual expression. The prevailing attitudes about sex among our youth are fundamentally antithetical to the development of attitudes more clearly associated with long-term stable marriages (Stanley, personal communication, March 1995).

Reducing the *consequences* of adolescent sex is not the fundamental outcome of interest with ISH as it is with Comprehensive Sexuality Education (SIECUS, 1996). Solely measuring contraceptive use falls short of the character, relationship, and generational goals of ISH. For example, an adolescent who uses a condom consistently and correctly may still get an STD or suffer from emotional regret (Cale & Stone, 1992; Crosby, DiClemente, Wingood, Lang, & Harrington., 2003; Meeker, 2002; National Campaign to Prevent Teen Pregnancy, 2003).

The Case for Primary Prevention: A Paradigm Shift

A recent report from the *Commission on Children at Risk* highlights the need for a paradigm shift with respect to how professionals plan and implement prevention programs for youth. This commission (a group of 33 children's doctors, research scientists, mental health and youth service professionals) task was to empirically investigate the social, moral and spiritual foundations of child well-being. Added to this venture is the goal of informing public policy and practice with the identified empirical

foundations critical for the promotion and development of healthy youth. The commission met in a conference format at Dartmouth Medical School and conducted a comprehensive literature review including an evaluation of 18 commissioned papers. The product of this effort became a report known as *Hardwired to Connect* (Institute for American Values, 2003).

Implications of the Hardwired Report

According to the expert panel, practitioners need to reevaluate the current paradigm of prevention programs. This change requires a broader focus than the current "at risk" focus. A specific population who are vulnerable to disease is sometimes referred to by practitioners as "at risk" (Institute for American Values, 2003). Similarly, the term can be associated with specific individuals with multiple risk factors. When the term "at risk" is used to describe interventions, it influences youth programs and research. In this way, referring to programs as serving "at risk" populations creates a model of biased thinking. By narrowing the scope of prevention efforts in this way, it encourages what is frequently known as an "at risk" model. The commission found that this model has a primary focus related to individual pathology and dysfunction. The commission went on to say that programs then identify the problem with the person, rather than from systemic social or environmental conditions. The "at risk" paradigm leads to solutions that center on programs, professionals, and an over reliance on pharmacological and technological fixes such as prescribed drug use or condom use. This bias seldom places primary emphasis on systemic characteristics of family and the roles of social, civic, and religious institutions. Focus within an "at risk" paradigm results in an emphasis on the most extreme cases. The metaphor used is one of a "triage" approach for doctors characterized

by limited resources and time and maximized survival rates. However, the current crisis facing youth is not with an individual, it is with an entire generation over the long term. Synonymous for this type of generational focus is primary prevention. While the "at risk" framework may be necessary, alone it is not sufficient to deal with the swelling pandemic of sexually transmitted infections (Genuis & Genuis, 2004).

Role of the Community

The Commission reports that considerable evidence supports the fact that human beings are hardwired to connect to other people (Child Trends, 2003 studies cited in Institute for American Values, 2003). Meeting a child's need for connectedness requires a new paradigm, a new type of community the commission calls "authoritative communities." Authoritative communities are defined as "groups of people who are committed to one another over time and who model and pass on at least part of what it means to be a good person and to live a good life (Institute for American Values, p. 14)." Table 7 describes the characteristics of authoritative communities recommended by the Commission on Children at Risk. Communities need to value youth and provide alternatives to risky behaviors such as recreation centers and activities. Schools may fulfill some of these recommended characteristics; however, they are certainly not the only community to use to instill these principles. Faith communities can play an important role as well.

Attachment Needs of Children and Adolescents

In order to conceptualize a primary prevention model addressing adolescent sexuality, it is important to understand human connectedness. The ability to connect with children influences the protective nature of their environment. From our earliest years,

humans have biochemical structures designed to facilitate attachment with other significant people. The attachment is facilitated emotionally before language. According to Schore:

> The self-organization of the developing brain occurs in the context of relationship with another self, another brain. This relational context can be growth-facilitating or growth inhibiting, and so it imprints into the developing right brain either resilience against or a vulnerability to later forming psychiatric disorders (as cited in Institute for American Values, 2003, 16).

Table 7

Ten Characteristics of an Authoritative Social Institution

It is a social institution that includes children and youth.
It treats children as ends in themselves.
It is warm and nurturing.
It establishes clear limits and expectation.
The core of its work is performed largely by non-specialists.
It is multi-generational.
It has a long-term focus.
It reflects and transmits a shared understanding of what it means to be a good person.
It encourages spiritual and religious development.
It is philosophically oriented to the equal dignity of all persons and to the principle of love of neighbor.

Source: Institute for American Values, 2003

Recent studies have identified the roles of neuropeptides such as oxytocin in females and vasopressin in males. Because females and males have large numbers of receptors located in the brain, social bonding can therefore be explained as a biochemical response

in the reward circuitry of human brains. One manifestation of this can literally be an "addiction" in pair-bonded couples. Turner and colleagues (1999) found that oxytocin enters the female's bloodstream during sexual intercourse, during birth, and while women are lactating. This new information sheds insight into the biochemical nature of human pair bonding and parental attachment as well as the implications of adolescent relationships.

The foundations for romantic pair bonding are developed in adolescence because that is when dating begins (The National Campaign to Prevent Teen Pregnancy, 2003, September). The ages of 11 – 18 are therefore a key developmental stage for targeted primary prevention programs to impart information and support for healthy pair-bonding and relationship development. In order to successfully implement a prevention program designed to increase healthy relationship choices in youth, a clear understanding of the needs of the adolescent population is important.

Specific needs arise during puberty and adolescence because of the rapid growth and change that occurs. These changes are related to increases in estrogen in females and testosterone in males (Gutmann, 1987). Hormone levels are not the only risk factor contributing to the special needs of this age group.

Adolescent Brain Development

New insight into adolescent brain development is relevant to prevention programs. According to Twenge's research (as cited in Institute for American Values, 2003) adolescents can experience a decrease in almost 50 percent of the brain connections. These maturational changes occur in the prefrontal cortex, the region of the brain that regulates cognitive functions such as judgment and insight (Sowell, et al., 1999), as well

as within neurotransmission of dopamine. This may explain why adolescents' pleasurable experiences need to be "ramped up" or "magnified" as compared to adults (Institute for American Values, 2003). Loud music, fast driving, and living "on-the-edge" may help the adolescent compensate for the "reward deficiency" in their brains.

Brain biochemistry could explain why societies across time intentionally guide male and female adolescents toward prosocial sexual energy by implementing gender-specific rites of passage during this stage of development. Common rites in the United States include the Jewish Bar Mitzvah and Bat Mitzvah, the Hispanic Quinceañera, as well as African and Apache traditions. These passages typically include intergenerational activities by elders intended to pass on cultural heritage and communicate the interconnectedness of culture across generations. Without an intentional societal, family, and/or religious effort to channel sexual energy at this age, the new generation demonstrates aggression and sexual energy that is disconnected from society at large.

Several cases exist to demonstrate the need to guide adolescents toward prosocial expression of sexuality. The "Spur Posse" was a group of 20 to 30 Lakewood High School students—primarily football players. Membership was based in part, on a point system for sexual encounters. The group obtained notoriety when one member was charged for having sexually molested a 10-year-old female ("Girl molested at 10," 1993). Another is a 10-year-old boy who raped and sodomized two girls ages 8 and 4 after watching pornographic movies (as cited in Lickona, 1991). Girls coming of age in the new millennium are equally aggressive. A recent segment of Oprah Winfrey highlighted an epidemic of oral sex among young adolescents. Several adolescent girls, ages 12 – 14,

and their parents were interviewed about the girls' acceptance, support, and practice of casual oral sex (Winfrey, 2002). The segment received significant response so the Winfrey show devoted a second show entirely to help parents prevent this problem. One does not have to search long to find hundreds of examples of antisocial sexual aggression and behavior in contemporary American culture. Historically, ancient civilizations have documented sexual aggression. However, the massive amount of information through media sources such as television, music and magazines increases vulnerability of adolescents and young children to sexual pressures because of confusing messages with respect to sexuality. Lickona (1991) advocates for sexuality education rooted in a foundation of character skills to educate youth responsibly during this tumultuous stage.

Gendered Needs of Adolescents

While emphasizing the importance of equality and avoidance of stereotyping or exaggerating gender differences, the Commission recognized the different needs of boys and girls with respect to social pathology. Girls are at more risk for early pregnancy and boys for sexual aggression and perpetration. Research has shown that gender-specific prevention and intervention programs have had better success (National Center on Addiction and Substance Abuse, 2003). Little support exists for placing neutrality on the meaning of gender for adolescents. Historically, research shows that trends toward an androgynous perspective when addressing gender may in fact do harm to children (Institute for American Values, 2003). Designing programs specific to gender for adolescents has the potential to meet core needs of both boys and girls during this stage without overexaggerating or stereotyping.

The Legacy of Emotional Stability and Regulation

Scientists now know that emotional stability or instability is intergenerational. Highly nurturing parenting positively influences emotional regulation in offspring. Likewise, neglect produces permanent biochemical changes in the brain that negatively affect stress tolerance and regulations of emotions (Institute for American Values, 2003). This emotional regulation is also linked to marital success and stability (Fitness, 2001). Thus the generational risk for illness continues with unhealthy marriages contributing to unhealthy children. For this reason, the *Commission for Children at Risk* called for widespread authoritative communities willing to address the root cause for this generational problem.

The Commission's recommendations set the stage for new strategies for prevention programs addressing adolescent risk and, specifically, sexual risk. The impact of premature, periodic pair bonding is evident with respect to the emotional realm as demonstrated by the regret and devastation demonstrated earlier in Mandy's story in chapter 1, as well as the study by the National Campaign to Prevent Teen Pregnancy. Actual physiological effects of premature, noncommitted pair bonding on receptors of oxytocin and vasopressin are less evident. However, a relation has been found between adult sexual dysfunction and emotions (Halaris, 2003; Opbroek, Delgado, Pedro, et al., 2002).

The prevention of emotional trauma alone provides adequate justification for the prevention of adolescent sexual behavior. However, premature initiation of sex is also related to higher risk of acquiring sexually transmitted diseases. An increased number of multiple partners is the number one risk factor related to sexually transmitted diseases

(Rosenthal, Biro, Succop, Cohen, & Stanberry, 1994). The question becomes, what can a culture or society do to foster healthy pair bonding and parental attachment as well as prevent premature pair bonding likely to cause harm to adolescents? One potential vehicle to disseminate opportunities for educational programs and skill building is sexuality education or health education curriculum in schools and faith based institutions. This paper will focus on primary prevention of adolescent sexual behavior through school-based curricula intervention. However, teachers and schools alone cannot solve a cultural problem. It will take the entire community—an authoritative community. Many community and school based initiatives are being developed to improve primary prevention strategies. Due to the sensitive nature of these initiatives, professionals and interventionist need to practice diligence and care to develop and implement these initiatives.

Best Practice for Curriculum Development

Prevention curricula developed from solid theoretical frameworks increase effectiveness of the intervention (National Campaign to Prevent Teen Pregnancy, 2004). For this section, best practice related to curriculum development and evaluation will be presented. Strategies and theories identified in peer reviewed literature as best practice can be replicated for programs that may be lacking empirical evaluation of an individual curriculum. Adopting and developing programs that integrate these recommended strategies is cost effective and provides accountability to funding agencies.

Social Learning Theory and Self-efficacy

A promising theoretical framework for character-based sexuality education is Bandura's social learning theory (Bandura, 1986; 2000). This theory stresses the impact

of learning occurring within social systems. In order to increase efficacy expectations, four foundations are required: performance accomplishment, vicarious experiences (modeling), verbal persuasion, and emotional arousal. The strongest influence on personal self-efficacy is performance accomplishment. Mastery or success is important to the development of high efficacy expectations. For example, many sexuality education curricula include role playing with refusal skills. Giving adolescents the opportunity to practice refusal skills in a safe environment is likely to increase self-efficacy toward avoidance of risk-behavior. Programs that incorporate self-defense such as the practice of the martial arts increase personal self-efficacy generally, but they also send protective messages. High expectations remind adolescents about their value and worth. Additionally, self defense is a social inoculation tool to counteract sexual perpetration. These programs can be offered as one or more components to sexuality education that potentially increase self-efficacy.

Programs that utilize peer role models and mentors can increase the potential to develop self-efficacy toward sexual abstinence as well as other positive choices for youth because role modeling provides opportunity for positive modeling and verbal persuasion. Mentoring occurs at cascading levels so that each developmental level can be mentored by someone slightly older or more mature. The support of a mentor lends a guiding hand during a confusing and critical developmental age. Other positive role models need to be provided to society at large.

One example is boxing coach Don Wizner. The 78-year-old New Mexico native has been a longtime resident of Longmont, Colorado. He is the founder of the Longmont boxing club and well known around the boxing community. Coach Don volunteers his

time to boys and girls who want to learn boxing. A former champion, he is at the gym nearly every day of the week after school and often on weekends attending the matches of his students. He charges a minimal tuition to cover insurance costs and a few necessities of the program. Most equipment has been donated personally or by other community members. Many youth who attend are from impoverished and dangerous neighborhoods likely to put them at risk. Some participants have very little appropriate male influence in their homes. Coach Don does not care where they are from nor does he spend time complaining about the injustices experienced by his students. A "no excuses" philosophy is the predominant atmosphere in the gym. However, he is keenly interested in where they are going and their potential to accomplish whatever they want if they are willing to work hard enough. Woven into the fabric of boxing skills, surrounded by the blood, sweat and stench of a dilapidated gym; teachable moments communicate positive messages verbally and nonverbally about the importance of education, avoiding drugs and alcohol, and the benefits of a disciplined life. Most importantly, his belief about their value and worth is communicated by his consistency and dedication to his students. These moments are the life blood that provides critical connections to soften the difficulties of adolescence. Unfortunately, not every child has the opportunity to work with a role model like Coach Don, but they do have almost constant bombardment through media by superficial celebrities. These types of shallow and often negative role models influence our children too.

The third aspect important to Bandura's theory of self-efficacy is emotional arousal. How a person uses 'self-talk' under stressful situations can either increase or decrease self-efficacy toward the desired behavior. One example of the importance of this element

can be demonstrated by the activities in the FRIENDS FIRST Mentoring program known as STARLITES. This program is gender-specific program for females in the sixth and seventh grades. As a 22 week program, STARLITES spend a large portion of the time analyzing media messages about body image. The participants are taught to look at the media through a critical lens. After identifying the false ideals about female identity promoted in the media, the girls spend time practicing the phrase, "I am beautiful just the way I am, and I deserve respect." This notion is reinforced again and again throughout the 22 weeks of the program. By developing this positive "self-talk," it is hoped that the students will incorporate this new information into their personal view of themselves. As a result, their self-efficacy toward sexual abstinence will be increased because they will not fall prey as easily to feelings of 'worthlessness' or a lack of self-respect and comprise their sexual boundaries under pressure. This strategy counters the aversive thoughts about their self-image thus providing a coping mechanism for the emotional arousal from their daily life experience.

The importance of fostering emotional intelligence is a critical factor related to healthy interpersonal relationship formation (Bar-On & Parker, 2000; Goleman, 1996). Mastering emotions and communicating effectively are important skills related to the formation and maintenance of long-term, healthy marriage relationships (Fitness, 2001). Emotional arousal from the power and impact of stories may also serve as a tool to develop an adolescent's self-efficacy toward sexual abstinence.

High-quality adolescent literature can be an effective strategy to cope with positive or negative emotional arousal. Literature can bridge the developmental gap between concrete and formal operational thought by operationalizing the abstract nuances

of relationships for adolescents: "Fine literature etches life's complexities clearly and when well taught, inspires us to discover wisdom for our own lives" (Ellenwood & McLaren 1991, p. 44). Reading provides a vehicle to promote relationship literacy and teach social skills and the emotional competency necessary to assist in identity formation. Strong metaphors communicate emotion specific to the developmental needs of adolescents. Literature can provide models of healthy and unhealthy emotional coping strategies. According to Goldman (1994), stories give depth, texture, and form to the complexity involved with loving each other. They offer a vision of how to win out and emerge to develop fulfilling relationships. The best stories use language that addresses emotions; they move us in a way that mere information can never achieve (Goldman, 1994). By processing the literature with adolescents, the teacher or mentor can gently guide adolescents toward the healthier coping strategies and improved self-efficacy toward abstinence.

The Positive Youth Development Model

Implementing positive youth development strategies in schools and communities can increase protective factors associated with increased resilience. Schools are well suited to implement curricula that protect students. Blum and Rinehart (1997), as well as Benson, Galbraith and Espeland (1998), identified protective factors and youth assets that correlated with the development of positive social values, social competency, and less risk behavior. Some protective factors are related to connectedness between parent and the family, as well as connectedness within the school and community. Two levels of assets include both internal and external assets. Internal assets encompass how youth spend their time, commitment to education, development of positive social values such as

caring, equality, integrity, honesty, responsibility, and restraint. Social competency and positive identity are all important to healthy outcomes for youth. Both youth assets and protective factors emphasize the importance of high expectations and clear boundaries for expected behavior. External assets include such elements as family support and empowerment. A full list of developmental assets is included in Appendix A.

Social Norming Theory

Understanding the impact that social norms have on both thought and behavior is well documented in the scientific community, specifically sociology and social psychology. Rooted in the findings of Campbell (1964) and Durkheim (1951), people tend to adopt attitudes and act in accordance to group expectations and behaviors. These behaviors are dependent on affiliation needs and social comparison processes (Festinger, 1954). The application of this theory was developed by Perkins and Berkowitz (1986) while looking at student norms regarding alcohol use. Typically, students believed that both the frequency and quantity of drinking were higher than actual consumption. They also believed that attitudes were more permissive than in fact was the case. By highlighting statistics that accurately reflect the positive choices of populations, prevention efforts can utilize social norms in a constructive way (Cialdini, 2001; Perkins & Berkowitz, 1986).

In contrast, a recent NBC news documentary (Couric, 2005) demonstrates what not to do with respect to social norms and abstinence among teenagers. Consistently throughout the hour program, statistics were read and highlighted on national television that "3 of 10 teenagers from the ages of 13 – 16 were having sex." NBC needs to be

educated on the power of their messages. A better way to take advantage of social norming is to say that 7 of 10 teenagers are sexually abstinent.

In summary, one public health model includes a social norming campaign in the community and through media that complements prevention programs and curricula offered in the schools. These same messages, when reinforced by parents in the home, are likely to reduce adolescent sexual risk taking. Simply implementing one five-week program or hanging up a few prevention posters are not likely to make significant or dramatic changes in behavior.

With respect to the curricular component of sexuality education, the National Campaign to Prevent Teen Pregnancy conducted a meta-analysis highlighting programmatic components found to be effective in sexuality and HIV prevention. Their conclusions are described in Table 8.

Best Practice for Evaluation

Discourse surrounding best practices regarding important outcomes for sexuality education frequently occurs at the community level. Quality curriculum development and evaluation are required by the No Child Left Behind Legislation (NCLB) signed by President George W. Bush in 2001 (No Child Left Behind, 2001). Under this legislation, any curriculum adopted by a federally funded school must have documented empirical evidence that supports its use and is based upon following six components: (1) uses empirical methods; (2) utilizes rigorous and adequate data analyses; (3) relies on measurements or observational methods that provide reliable and valid data; (4) uses either experimental or quasi-experimental design; (5) allows for reliability; and (6) endures expert scrutiny.

Table 8
Characteristics of Effective Sexuality Education Programs

Focus clearly on reducing one or more sexual behaviors that lead to unintended pregnancy or HIV/STD infection.
Incorporate behavioral goals, teaching methods, and materials that are appropriate to the age, sexual experience, and culture of the students.
Based upon theoretical approaches that have been demonstrated to be effective in influencing other health related risky behaviors.
Last long enough to allow participants to complete important activities (minimum of 10 hours.)
Provide basic, accurate information about the risks of unprotected intercourse and methods of avoiding unprotected intercourse.
Employ a variety of teaching methods designed to involve the participants and have them personalize the information.
Include activities that address social pressures related to sex.
Provide models of and practice in communication, negotiation and refusal skills.
Select teachers or peers who believe in the program and then provide them with training which often includes practice sessions.

Source: National Campaign to Prevent Teen Pregnancy, 2004.

Another major component of NCLB is the requirement of highly qualified and certified teachers and paraprofessionals. Qualifications for teachers range from certification in subject areas to undergraduate degrees. Some states may also require rigorous testing in content areas prior to the granting of a teacher's license (No Child Left Behind, 2001). Sexuality education is included under this rigorous protocol, and may require certification to meet the standards of NCLB. Typically, states do not require a certification for sexuality education teachers (Darroch, Landry, & Singh, 2000).

Sexuality education occurs across cultures in a variety of forms. Parents, communities of faith, the media, peer culture, medical professionals, and schools provide

information about sexuality to children. Prior to implementing sexuality education curricula, all aspects of the community should be given the opportunity to provide input into the goals and expectations of the curriculum. Communication between key school and program personnel needs to occur on a regular basis. These stakeholders include policymakers and decision makers, target participants such as parents, program managers, evaluation sponsors, and program staff. Timelines should be disseminated at the beginning of the project during staff, program, and teacher orientation. These timelines can be modified periodically with feedback from the stakeholders at each site. According to Rossi and colleagues (1999), the evaluator-stakeholder relationship is a key component of a successful evaluation as well as program implementation. This relationship builds over the duration of the project and continues until the final report is distributed.

Papineau and Kiely (1996) offer a timeline designed for empowerment and utilization for community-based evaluation. The initiation phase includes a presentation to the board of directors or administrators for their approval. The topics and questions to be addressed are developed over several meetings with the opportunity for stakeholders to comment on or change questions that they may be uncomfortable with or feel are not specific to the goals of the evaluation. During the instrument design and data collection phase, professionally trained program evaluators collect the data after receiving appropriate training. The program evaluator analyzes data according to stakeholder groups and writes reports with stakeholder groups. Strategic planning meetings follow the evaluation reports to decide what appropriate steps are needed to modify the program according to evaluation findings.

Due to the sensitive nature of sexuality education, great care and concern are required for successful implementation. The abstinence evaluation project presented here was staffed adequately and included a principal investigator as well as trained research assistants. Contracts were developed with an independent evaluator from the *Institute for Research and Evaluation* as well as doctoral students from Colorado State University. Generally, properly staffed program evaluations can contribute to the quality of the data collected by increasing linkage rates from pre to post test as well as minimizing attrition rates.

The independent evaluator is helpful to provide a nonbiased perspective and to assure confidentiality and security of respondents' answers. This evaluator also developed the tool used to collect data for the quantitative component. To ensure a quality evaluation, the following processes and protocols were implemented:

1. Active informed parental consent: The project director is responsible for writing and collecting parent permission for their adolescents to take part in completing the survey. This also includes providing the evaluation tool ahead of time to all stakeholders for review.
2. Professional input: After reviewing the evaluation tool, stakeholders are given the opportunity to suggest changes, additions or deletions prior to printing the tool.
3. Respect for the host school: Data are collected only after appropriate consent has been supplied, and when the teacher has agreed to a convenient day and time for data collection to occur.

In summary, well-staffed program evaluations increase the validity and reliability of the data collected. Quality data produces vital evaluation results that are valuable to assist with decisions about sexuality prevention and intervention efforts for communities.

Review of Empirical Literature

In order to gain perspective on empirical research related to adolescent sexual risk behaviors, sexuality curricula can be divided into three categories of programs based on specified goals. The first category includes programs with rationale specific to HIV and STDs that emphasize condom use. The second category includes programs with a rationale specific to adolescent pregnancy, typically with broad and overarching goals consistent with the *Guidelines for Comprehensive Sexuality Education* (SIECUS, 2004). The third includes programs with a goal of primary prevention specifically related to the delay of the initiation of sexual activity also know as sexual debut, or a reduction of youth reporting sexual activity, as well as a reduction of multiple partners. These programs are known as character-based sexuality education programs consistent with the *National Guidelines for Sexuality and Character Education* (Medical Institute for Sexual Health, 1995).

Condom Programs

With respect to programs with the primary goal of reducing the transmission of diseases, a high percentage of the curricula includes sexually transmitted diseases, consistent and correct condom use (CCU), and negotiating skills. These programs may or may not be school based, and many are conducted in clinics. All of the 11 studies that follow should measure the primary dependent variable of interest—consistent and correct use of condoms (CCU)—due to the HIV and AIDS focus of the programs evaluated. The

majority of the studies (8 of the 11) targeted high-risk adolescent populations disproportionately affected by HIV and AIDS such as runaways, IV drug users, youth in detention centers, and Black males. All of the studies included longitudinal follow-up ranging from 3 to 24 months.

Less than half of the reviewed studies (4 of 11) found significant results with consistent condom use (Jemmott, Jemmott & Fong, 1998; Magura, Kang, & Shapiro, 1994; Rotheram-Borus, Koopman, Haignere, & Davies, 1991; St. Lawerence, Brasfield, Jefferson, Alleyne, O'Bannon, 1995) and only two of them used random assignment (Jemmott, Jemmott & Fong, 1998; St. Lawerence, et al., 1995). Although condom use was reported, none of these peer reviewed studies measured CCU use or reported effect sizes.

A common programmatic component for the studies that did show increased condom use included skills training and social learning frameworks. Magura and colleagues (1994) found positive effects on condom use with skills training combined with therapeutic interventions for incarcerated, male drug users. One study reported delayed onset of sexual activity (St. Lawerence, et al., 1995).

Jemmott, Jemmott and Fong (1992) reported significant effects related to the teacher or program facilitator. Female presenters in this instance were more effective with male participants. This indicates the potential confounding variable of the teacher or facilitator on program outcomes.

Some of these studies were conducted with a majority of their samples being very young participants, 12 years of age (Jemmott, Jemmott & Fong, 1998; Kirby, Korpi, Adivi & Weissman, 1997; Slonim-Nevo & Auslander, 1996). The age of the program

participant introduces the confounding variable of pubertal development. Condoms in the United States are typically too large for this population to use; therefore, CCU is irrelevant if the condom does not fit properly.

Crosby, DiClemente, Wingood, Lang, and Harrington (2003) found that among adolescents reporting 100% CCU, 17.8% had positive test results for one of the three STDs observed. However, of those reporting less than consistent condom use, 30% had acquired an STD. So it is likely that CCU provided some transmission reduction of chlamydia trachomatis, neisseria gonorrhoeae, or trichomonas vaginalis.

At best, programs that focus on increasing condom use in adolescent populations have mixed results. Problems with these evaluations include the lack of random assignment, absence of the dependent variable of CCU, as well as an absence of reporting practical significance with effect sizes.

Comprehensive Sexuality Program Effectiveness

The second category of programs is specific to comprehensive sexuality education. These programs include but are not limited to content on human reproduction, decision making, refusal skills, media pressure, contraception, and abstinence. Five studies were reviewed with sample sizes greater than 500 including a 12-month follow-up.

Howard and McCabe's (1990) groundbreaking study of a program called *Postponing Sexual Involvement* (PSI) found that nonprogram students were five times more likely to have begun having sex than those who completed the program. A multi-component program, PSI includes both abstinence skills and contraceptive information. This study has historical significance because it was the first study to identify the important positive impact of refusal skills and effective peer education components.

Eisen and Zellman (1990) found that as a whole, 8 – 12 sessions based on the 'health belief model' did not increase the likelihood of contraceptive use for students who initiated intercourse during the intervention. Students reporting sexual activity prior to the intervention reported higher contraception use after 12 months in both the comparison and program groups with males reporting slightly better outcomes.

Kirby and Barth (1991) in their study of *Reducing the Risk* documented that the project delayed the onset of sexual intercourse and increased contraceptive use. This finding was true only when the sexual initiation variable was collapsed with the contraceptive use variable. This led Kirby (1991) to make this statement:

> Even though the curriculum was designed to reduce unprotected intercourse and placed considerable emphasis on both abstinence and on using birth control, it clearly had a greater impact on delaying sexual initiation than on increasing contraceptive practice. In combination with the findings from the evaluation of *Postponing Sexual Involvement*, this suggests that it may be easier to delay the onset of intercourse than to increase contraceptive practice. (p. 261)

Hubbard, Giese, and Rainey (1998) found positive effects in the desired direction for initiation of sexual activity as well as increased condom use for sexually inexperienced youth at the time of pretest. However, the high attrition rate of 58%, lack of random assignment, and small cell sizes do not make this a strong study.

In general, the strongest studies of comprehensive sexuality education programs did not affect the frequency or reduction of sex for teens who were currently sexually active. Some found an increase in contraceptive use for youth reporting sexual activity, and a delay in sexual activity for students not sexually active at the time of the pretest.

Abstinence Programs

Character-based sexuality programs are provided within a framework of character and relationship skills. These programs may or may not have information about

reproduction. Their focus is on developing and promoting healthy relationship skills, and promoting sexual abstinence until marriage—they usually include information about sexually transmitted disease, self-efficacy toward abstinence, refusal skills, information and skills about healthy boundaries, as well as effective communication. They may or may not include information about condoms and contraceptives.

Six published studies were found for character-based sexuality education. Olsen, Weed, Ritz and Jensen (1991) correlated sexual attitudes with behavior and measured program impact of three curricula. Females in this study had a more positive attitude toward abstinence than males. This study compared three curricula: *Teen-Aid* (15 units), *Sex Respect* (10 units), and *Values and Choices* (15 units) implemented in the 7^{th} – 10^{th} grade. Both *Teen Aid* and *Sex Respect* are from a directive philosophy, and *Values and Choices* is a nondirective philosophy. The least overall change in attitudes occurred in the nondirective *Values and Choices* curriculum.

Jorgensen (1991) found a significant increase in knowledge of anatomy and physiology, and sexually transmitted diseases. The program included occupational planning in conjunction with the sexuality education, parent involvement and communication, decision-making skills, and an emphasis on respecting others. A positive trend toward lower sexual activity rates was also found. However, the results did not reach statistical significance ($p = .09$).

St. Pierre, Melvin, Kaltreider, and Aikin (1995) studied a program over 27 months that included multiple components of alcohol and other drugs, tobacco and sexual abstinence prevention. The interventions studied included students aged 13 years who completed 12 sessions as well as students who completed 12 sessions and 2 boosters.

Participants without the additional boosters had more positive outcomes which included a reduction in sexual activity for the sexually active teens, but overall no changes in behavior were documented. These findings may have been a result of selection bias or methodological shortcomings.

Kirby, Korpi, Barth, and Caganpang (1997) studied a project designed to replicate the abstinence focus of *Postponing Sexual Involvement*. The project was implemented across California and included random assignment with 91% retention for the 17-month posttest. No significant differences were found between the program group (receiving a 5 day intervention) and the control group. The mean age at pretest was 12.8 years and the follow-up was conducted at age 14.5 years. This suggests that the follow-up may have been prior to the typical age of transition to sexual intercourse (at that time, age 15 years).

Denny, Young, Rausch, and Spear (2002) evaluated a 5-week program called *Sex Can Wait* targeted to middle school and high school adolescents. The 23 lessons cover reproductive anatomy, puberty, values and decision making, communication, relationships, and goal setting. The project was found to be effective with respect to an increase of self-efficacy toward sexual abstinence for the elementary school component. No differences were found in behavior for the middle school component, and significant differences were found with lower initiation of sexual activity between the program and comparison groups for the high school level immediately after program completion. The study did not include a 12-month follow-up.

Lerner (2005) found that students who received the curriculum *Best Friends* had relative odds ratios that were at lower levels for smoking, using drugs, drinking alcohol and sexual activity when compared to a similar population from the Youth Risk Behavior

Survey. The program emphasis on "self control" had a positive effect on other risk behaviors such as tobacco and alcohol use. The curriculum covers eight units given over one year. Those topics include love and dating, self-respect, decision-making, alcohol and drug abuse, physical fitness and nutrition, and AIDS and STDs.

Public Health and Community Models

A successful community model that promoted abstinence as the primary message to school-aged children can be found in Uganda. This model mirrors the definition of "authoritative community" recommended in the *Hardwired* report (Institute for American Values, 2003). Uganda seems to have experienced the most significant decline in HIV rates of any African country. The national average of HIV infected pregnant women declined from 20.6% in 1991 to 6.1% in 2000. The primary prevention strategy used was the ABC model: Abstinence until marriage and being faithful in marriage were the primary messages for school-aged children, sexual abstinence and being faithful in marriage (zero grazing) were the primary messages for the general population of adults, and condom use for high risk populations (Green, Nantulya, Stoneburner, & Stover, 2002). The leadership in the country promoted a targeted message and effectively utilized faith communities in their prevention efforts.

In summary, programmatic effects of school-based efforts supporting abstinence are lacking results on the dependent variable of interest in the peer reviewed literature. The main variables of interest focus on delayed onset of sexual activity, reduced frequency of sex, and reduced numbers of multiple partners. However, the public health model from Uganda does support the benefits of an "authoritative" community recommended by the *Hardwired to Connect* report. Cultural and social forces in the United States may require

a more concerted and coordinated effort by the entire community, rather than a curriculum intervention alone. Consistent messages to adolescents from the leaders, adults, parents and authorities on the importance of sexual abstinence---combined with curricula grounded in promising theoretical frameworks--- may have the best chance to increase abstinence outcomes.

Few quality evaluations exist supporting a program paradigm with respect to sexuality education. No program has demonstrated a reduction of sexually transmitted disease or adolescent pregnancy except, for the Uganda model.

Best Practices for School-Based Sexuality Education

Beyer and Apple (1998) outlined general issues with respect to the debates about curricula (of any type) such as epistemological and historical considerations. Communities and schools should make epistemological decisions about what counts as knowledge. For some communities, the ISH model may outline priority requirements justifying appropriate sexuality education outcomes they wish to target. Inclusion of ISH as a framework for school-based sexuality education programs may assist in guiding curriculum decisions addressing each of the critical domains. By incorporating multiple dimensions addressing the epidemic of sexually transmitted disease, out-of-wedlock childbearing and other related risks associated with adolescent sexual activity the ISH model is comprehensively addressing outcomes of priority interest to many communities. Not including one of the domains may be considered an incomplete prevention strategy.

Historical traditions and community norms around sexual expression should also be considered. School districts have the option of choosing strategies that provide optimal health messages for school-aged children. Optimal health messages are important to be

included as positive primary messages to young adolescents not yet sexually active (Brownlee, 1999; Cialdini 2001; Calvin, 1996; King, 1997). Schools are ideally situated to address this epidemic from a primary and secondary prevention focus because of the population they serve. Primary prevention forestalls the onset of illness or injury and secondary prevention leads to early diagnosis, prompt treatment, and a reduction of unhealthy behaviors (Pickett & Hanlon, 1990).

In order to meet the demands of NCLB, selecting a curriculum that is scientifically based is no small task. For example, evaluations that have defined the outcome variable of "condom use" do not address the other domains such as sexual victimization or nonmarital pregnancy. Positive outcomes of "contraceptive use" fall short in addressing the emotional and psychological impact of premature adolescent sexual relationships. Therefore, it is not possible to recommend a curriculum that effectively responds to every category of the ISH model, unless outcomes are found in the following: reduction of sexual activity, delayed onset of sexual activity, reduced frequency of sex, and reduction of multiple partners.

A peer-reviewed study from a nationally representative sample of approximately 3,800 secondary sexuality teachers found that 65% reported that abstinence was taught as the best option and 7% presented it as one option. Even though abstinence is mandated by most states as an important health component for curricula, 5% of schools report not teaching abstinence at all (Darroch, Landry, & Singh, 2000). An underlying assumption schools have used in the past to make curriculum decisions is that most youth will be sexually active before high school graduation; therefore, schools must provide comprehensive sexuality curricula (Parker, 2001). However, the latest trend data do not

support this assumption. Two studies have found that the increased frequency of adolescents choosing to delay sex has substantially contributed to the decline of teen pregnancy rates (Mohn, Tingle, & Finger, 2003; Santelli, Abma, Ventura, & Lindberg, 2004). Most high school teenagers (53%) are abstinent (MMWR, 2004). Of the sexually active adolescents surveyed, 25% were abstinent at the time of the report. The increase of funding for programs that promote abstinence has occurred simultaneously with this trend, and has likely contributed to the increase of teenage abstinence. However, no conclusive evidence can pinpoint exactly what is responsible for the increase of abstinence in adolescents (Kaiser Family Foundation, 2002). Some specific community based strategies do exist in the literature.

Bruckner and Bearman (2005) reported that adolescents who made virginity pledges experienced the same rate of sexually transmitted diseases and report more oral sex than adolescents who do not make the pledge. They concluded that a pledge of virginity may not be an optimal approach to prevention of sexually transmitted diseases. For the STD analysis, they used only one variable (3 STDs in urine sample). By adding other variables related to STDs such as diagnosis or physical symptoms, Rector and Johnson found lower rates of sexually transmitted diseases. Likewise, a reanalysis of the same data by Rector and Johnson (2005 b) found that the Bruckner and Bearman article analyzed only a small subgroup of adolescents who had made a virginity pledge ($n = 21$) versus the over 2,000 adolescents making a virginity pledge out of the entire sample of 14,116. Based on this small subpopulation they concluded that pledgers engaged in more oral sex than nonpledgers. This evidence provides support that the increase in

communities promoting the pledge to virginity was a contributing factor to the increase of abstinence and recent decline of adolescent pregnancy rates.

Conclusion

Limited evidence exists to support the effectiveness of the three types of sexuality education programs reviewed regardless of their focus or intent (consistent and correct use of condoms, comprehensive sexuality education, or character-based sexuality education). Most studies are inconclusive due to small sample sizes, no reported effect sizes, high attrition, an absence of longitudinal data, or nonequivalent groups. Some comprehensive sexuality programs have documented an increase in sexual abstinence and contraceptive practice. One character-based abstinence program, *Best Friends*, demonstrated significantly reduced risk behavior. Results do show that schools can support the promotion and facilitation of effective abstinence messages and that youth are open to these messages (Mohn, Tingle, & Finger, 2003; Santelli, Abma, Ventura, & Lindberg, 2004; U.S. Department of Health and Human Services, 2002). Curricula should be developmentally appropriate and carefully targeted. Teachers should be well trained and comfortable with the content (Frauenknecht, 2003; Nevills, 2003). Sexuality education is a community decision. As Hymowitz (2003) states, "Comprehensive sexuality education promises pleasure, but abstinence education pushes honor-and a surprising number of kids seem interested in buying (p. 19)."

In summary, communities, school boards, and parents have the responsibility to choose sexuality curriculum that meets the norms and expectations deemed important to healthy adolescent development. Local decisions made by the community should weigh the existing evidence and make the best decision for the health and welfare of future

generations. Gaps in the literature exist with respect to the effects and impact of character-based sexuality education. This program evaluation will assist communities and public health officials in their decision making and program planning if they chose to implement primary prevention for their respective schools.

CHAPTER 3: METHODS

This study accessed existing data that were included as an evaluation component for a federal grant through the Maternal and Child Health Bureau as well as the evaluation component for an adolescent pregnancy prevention initiative funded by two counties Temporary Assistance for Needy Families (TANF) programs in Colorado. Five school communities participated in collecting these data, and they were (and continue to be) collaborative partners for the grant. Active informed parental consent protocol was used to solicit participants for the study. Student participants completed the pre - and posttests during the spring and fall semesters of 2004. Students taking the initial surveys in the spring of 2004 completed a 12-month follow-up survey in the spring semester of 2005. An additional 12-month follow-up survey is planned for the fall of 2005 for students taking the initial pre and posttest during fall semester of 2004.

New data collection was from interviews of students and parents identified from existing data. A qualitative study of extreme cases was conducted. Each case included a student and parent. An adolescent risk composite score and profile of emotional intelligence from the Bar-On EQ-i (Bar-On & Parker, 2000) was included with each case as well as a checklist of youth assets completed by the parent.

Design

The purpose of this study was to determine the relative value of providing school-based primary prevention of adolescent sexual risk behavior, with objectives to

increase behavioral intentions and actual behavior toward sexual abstinence. Students in the program schools received the character-based sexuality curriculum, called *WAIT Training* (Krauth, 2003), with an additional supplement of a literature component known as *The Art of Loving Well* (Boston University, 1981). The *Art of Loving Well* supplement includes character-based adolescent literature comprised of short stories that reinforce and operationalize the concepts presented in the *WAIT Training* curriculum. The comparison school used a curriculum designed by the health teacher from the current district program. This teacher developed curriculum was a nondirective comprehensive sexuality education model.

The design for the quantitative study was a mixed quasi-experimental 3 x 2 factorial with repeated measures on the second factor. The first factor had three levels or groups, which provided information about the effect of teacher modality. Group one included two schools that provided the *WAIT Training* curriculum taught by a 'specialist' teacher. The 'specialist' served as a guest teacher and was not an employee of the school district. Group two included two schools each providing the *WAIT Training* curriculum taught by the 'regular' teachers employed at the school. Group three was the comparison school that was not using the *WAIT Training* curriculum or literature supplement. The comparison school provided sexuality education taught by the health teacher, who was an employee of the school district. Table 9 shows the design and numbers of participants for the comparison group (C), which used the current sexuality education offering, and the program schools (W) are also shown.

This 3 x 2 design was selected because it is a medium strength quasi-experimental approach and the opportunity to conduct random assignment was not available. The

school districts and the communities they served were supportive of the study, and the researcher had a long-standing relationship with each of the participating public school communities. One of the study's strengths was the fact a 12-month follow-up to program implementation was possible. The inclusion of a qualitative component sheds deeper insight into what strategies and components work best or do not work with respect to adolescent characteristics and needs. Follow-up was provided individually for students who were absent for the survey administration in order to maintain high quality retention rates for the study (Table 9). The average retention rate the three groups at follow-up was 63%.

Table 9

Research Activities for Pre to Post and 12 Month Longitudinal Follow-up

Group	Existing data spring '04 & fall '04	Existing data 12 month follow-up spring '05	Percentage of pre-tests linked to follow-up	Percentage of follow-ups linked to posttest	New Data 15 month follow-up interviews
Group One					
Specialist teacher 15 days	O X_W O $N = 166$	O $n = 68$	65%	94%	O+ $n = 16$
Group Two					
Regular teacher 9 weeks	O X_W O $N = 527$	O $n = 213$	65%	95%	O+ $n = 16$
Group Three					
Comparison health teacher 9 weeks	O X_C O $N = 114$	O $n = 44$	59%	93%	

O = Pretest, Posttest, and 12 month follow-up
X_W = WAIT Training curriculum with Loving Well component
X_C = Current curriculum offering
O+ = Qualitative case study of exemplar cases

Population of Interest and Sampling Frame

Group One

The first group included a sample (n = 166) from two small rural public schools, located approximately 50 miles east of Denver, Colorado. The combined gender breakdown for the sample was 51% male and 49% female. The ethnicity breakdown was 83% Caucasian, 9% Hispanic, 0% Black and 8% other racial classification such as Asian or Native American. The grade level breakdown for group one was, 30% in the 9th grade, 55% in the 10th grade, and 11% in the 11th or 12th grade. At the time of the pretest 70% of these students reported that they were currently abstinent, and 30% of these students reported they were currently or had been sexually active. The curriculum used with these schools was taught by a 'specialist' teacher over 15 days for 50 minutes each. Students received only the *WAIT Training* curriculum or the *WAIT Training* curriculum with a few selected stories from the *Loving Well* anthology. This model did not include any contraceptive information within the scope of the health course.

Group Two

The second group (n = 527) included two schools from suburban communities located between 30 and 50 miles northeast of Denver, Colorado. The combined gender breakdown for this sample was 44% male and 57% female. The ethnicity breakdown was 51% Caucasian, 35% Hispanic, 4% Black and 10% other racial classification such as Asian or Native American. The students in group two were mainly in the 9th grade (95%) with 68% of these students reporting that they were currently abstinent, and 30% of these students reported they were currently or had been sexually active. Students in this group received the WAIT Training curriculum over 9 weeks which was supplemented with

guest speakers, videos, and the Loving Well curriculum. A contraceptive component was included for one day. Either the contraceptive component was taught within a marriage context or full disclosure of risk was used when discussing contraceptives. Both of these models meet the directive philosophy of character-based sexuality education. The contraceptive components were clearly delineated from the abstinence component and taught in a separate setting.

Group Three

The third group included a sample ($n = 114$) from a suburban school that is located approximately 50 miles east of Denver, Colorado. The gender breakdown for this sample was 43% male and 57% female. The ethnicity breakdown was 53% Caucasian, 44% Hispanic, 1% Black, and 2% other racial classification such as Asian or Native American. The majority of students in group three were in the 9^{th} grade (93%) with 67% of these students reporting that they were currently abstinent, and 28% of these students reporting they were currently or had been sexually active. The majority of the curriculum used was a teacher developed, non-directive model; however, it was later revealed that it included a directive abstinence video from the *Dr. Phil Show* (McGraw, 2003) on teen sex. A one day nondirective contraceptive unit was presented as well.

Attrition does occur; however a review found that all school types exhibited a common pattern regarding attrition. For all schools, the drop-out rate was highest among male students, Hispanic students, and for sexually active students. Therefore, the comparability of groups was not affected by attrition.

The program had strong support for all three groups from all segments of the community. The community support included the faith community, school district,

school board, county commissioners, parents, teachers, and the Department of Health and Human Services, Maternal and Child Health Bureau.

Quantitative Data Collection

Eight hundred seven surveys were administered to students during the spring and fall of the 2004 academic year. Three hundred twenty-five 12-month follow-up surveys were administered in the spring of 2004 to students who participated in the program. Surveys were linked from pre- to posttest and follow-up based on a confidential code made by each student. Surveys were administered by trained research assistants familiar with the participating teachers and schools. Research assistants followed quality protocol with respect to survey administration by reading the same directions to all students and ensuring the confidentiality of their answers.

Quantitative Instrument

The baseline existing data from program groups and the comparison group were collected with a tool of 94 questions used with permission from the Institute for Research and Evaluation. The 12-month follow-up data were collected with a modified tool of 40 questions. Support for the validity and reliability of the instrument comes from both published and unpublished data that have been collected since the early 1980s (Olsen, Weed, Ritz, & Jensen, 1991; Weed, Olsen, & Tanas, 1998). Questions measured the six constructs of future orientation, affirmation of abstinence, personal efficacy, justification for sex, peer environment, and behavioral intentions. The dependent variable included intention to have sexual intercourse. Previous research demonstrated predictors linked to behavioral intentions toward sex (Rue, 2003). Figure 1 illustrates the multiple regression coefficients from this previous research for the prediction model. The prediction model

demonstrates, using a previous sample ($N = 105$), that the six "predictor" variables plus the opportunity variable do, in fact, strongly predict variance in behavioral intentions to have sex ($R^2 = .88$) (Rue, 2003). The opportunity construct is measured by the question: *How likely do you think it is that someone might try to get you to have sexual intercourse with them?* This variable is important because it assesses perceived pressure or lack of pressure experienced in the day-to-day environment of the student.

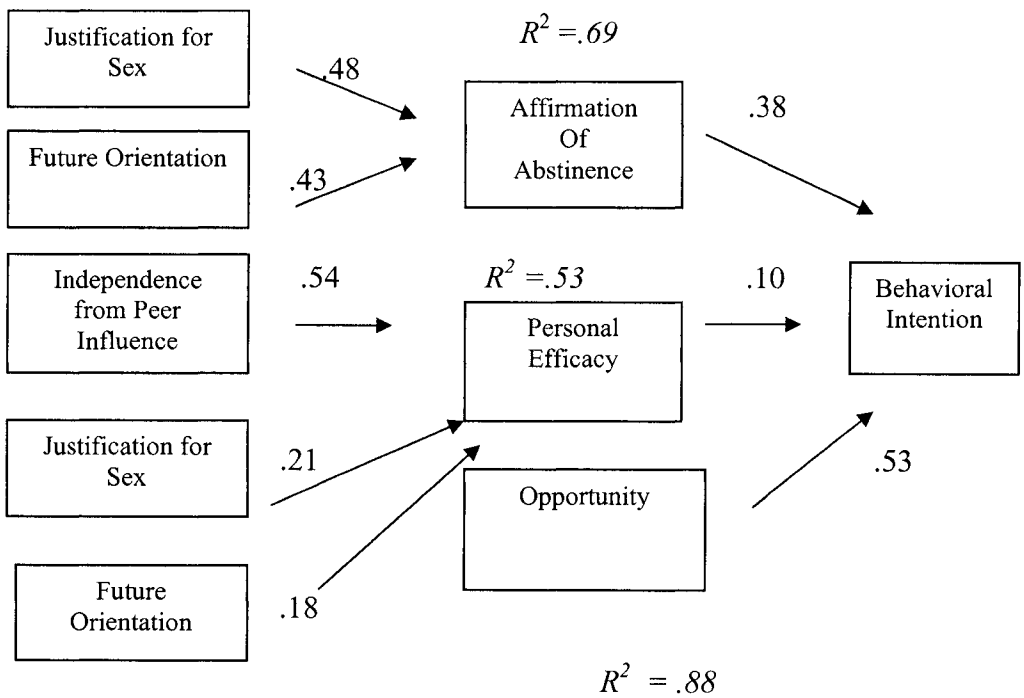

Figure 1. Prediction model first and second order predictors of behavioral intention (Rue, 2003).

Affirmation of Abstinence

This variable measures the extent that students' value abstinence (Olsen, Weed, Ritz, & Jensen, 1991; Rue, 2003; Weed, Olsen, & Tanas, 1998). The questionnaires used 5-point Likert scales from *very important*, to *not at all important*, or from *strongly*

agree to *strongly disagree*. The scale for this study is made up of the following four questions (α = .92):

It is important to me to wait until marriage before having sex.

It is against my values for me to have sexual intercourse while I am unmarried.

Having sex before marriage is against my own personal standards of what is right and wrong.

I have a strong commitment to wait until marriage before having sex.

Personal Efficacy

These items measure the personal confidence that sexual abstinence is possible (Olsen, Weed, Ritz, & Jensen, 1991; Rue, 2003; Weed, Olsen, & Tanas, 1998). The measurement is on a 5-point Likert scale from *not at all sure*, to *very sure*. The following questions make up the personal efficacy composite (α = .86):

If you were going out with someone you really liked and did not want to have sex, how sure are you that you could do each of the following:

a. How sure are you that you could STAY AWAY from situations that might lead to sex (like going to a bedroom with a date, drinking alcohol, doing drugs)?

b. How sure are you that you could TALK to your girl/boyfriend about your decision not to have sex?

c. How sure are you that you could EXPLAIN your reasons if your girl/boyfriend pushes you to have sex?

d. How sure are you that you could FIRMLY say "no" to having sex?

e. How sure are you that you could STICK with your decision not to have sex?

f. How sure are you that you could STOP seeing your girl/boyfriend if he/she continues to pressure you to have sex?

Future Orientation

This item measures the extent that adolescents see viable, attractive options for their future and see sexual involvement and its consequences as a barrier to those future

options (Olsen, Weed, Ritz, & Jensen, 1991; Rue, 2003; Weed, Olsen, & Tanas, 1998). The measurement is on a 4-point scale from *It would make it a lot harder*, to *It would not make any difference*. The following questions make up the future orientation composite ($\alpha = .81$):

> *Do you think that having sex as a teenager would make it harder for you to get a good education in the future?*
>
> *Do you think that having sex as a teenager would make it harder to have a good marriage in the future?*
>
> *Do you think that having sex as a teenager would make it harder for you to get a good job or have a successful career in the future?*

Justification for Sex

This item measures the way that adolescents justify sex (Olsen, Weed, Ritz, & Jensen, 1991; Rue, 2003; Weed, Olsen, & Tanas, 1998). The measurement is on a 5- point Likert scale from *strongly agree*, to *strongly disagree*. The following four items make up the justification for sex composite ($\alpha = .79$):

> *Having sex with a boyfriend or girlfriend is a good way to show how much you care for them.*
>
> *I think it is okay for unmarried teenagers to have sexual intercourse if they use birth control.*
>
> *Whether or not I'll have sex depends on what my boyfriend/girlfriend decides.*
>
> *If I am in love and sexual intercourse 'just happens,' I don't see that as a problem.*

Independence from Peer Influence

This variable measures the degree to which the adolescent makes decisions independently from the influence of peers ($\alpha = .48$) (Olsen, Weed, Ritz, & Jensen 1991; Rue, 2003; Weed, Olsen, & Tanas, 1998). The measurement is on a 4-point Likert scale from *strongly agree,* to *strongly disagree.*

The following four items make up the independence from peer influence composite:

> *Sometimes I give in and do things I shouldn't do so that my friends will not think I am a nerd.*
>
> *It is important for me to do what is right, even if I lose some friends.*
>
> *If my friends try to get me to do something that I am not suppose to do, I just refuse to do it.*
>
> *It's not worth going against my own standards in order to be accepted.*

Behavioral Intention

These items measure the adolescents' future intentions to have sex (Olsen, Weed, Ritz, & Jensen 1991; Rue, 2003; Weed, Olsen, & Tanas, 1998). The measurement is on a 4-point scale from *I'm certain I won't*, to *I'm certain I will*, or *I definitely would not do it*, to *I definitely would do it.* The following two questions make up the behavioral intention composite ($\alpha = .83$):

> *How likely is it that you will have sexual intercourse at any time before you get married?*
>
> *If someone did want you to have sexual intercourse with him/her during the next year, what would you do?*

Opportunity

This item is important because it assesses a perceived pressure or lack of pressure that may exist in the day-to-day environment of the student. It is measured by one question:

> *How likely do you think it is that someone might try to get you to have sexual intercourse with them?*

Qualitative Data Collection

Cases for the qualitative component were identified separately by an independent research consultant at the Institute for Research and Evaluation. This separate site

selected cases who fit into one of four categories derived from the following research questions:

1. What are the characteristics of students who had strong gains between the pre and post test and maintained sexual abstinence after 12 months?
2. What are the characteristics of students who did not move or moved away from sexual abstinence from pre to post test and maintained sexual abstinence after 12 months?
3. What are the characteristics of students who had strong gains between the pre and post-test and did not maintain sexual abstinence after 12 months?
4. What are the characteristics of students who moved in an undesirable direction away from sexual abstinence between the pre and post test and did not maintain abstinence after 12 months?

The operationalized definition of "strong movement" or "gain" and "movement away from" were determined by using a risk index composed of mean scores on the mediating variables of behavioral intention, affirmation of abstinence, justification for sex, personal efficacy, and opportunity. The students' identification codes that matched the criteria previously outlined from these selected cases (exemplars) were submitted to the researcher by the Institute for Research and Evaluation. Table 10 represents the demographic information for the eight selected cases, as well as their independent variable mean scores on the risk index from pre- and posttests. The numbers for their qualitative research questions which indicated their pattern of anticipated and unanticipated directions immediately after the course and after 12 months. The first four

students in Table 10 were abstinent at the time of the follow-up. The last four reported being sexually active.

Table 10

Demographics and Risk Index Mean Scores for Selected Cases- Qualitative Interviews

Gender	Ethnicity	Cohort	M pre – M post	Research Question
F	Caucasian	$9^{th} - 10^{th}$	3.29 – 4.56	1
M	Caucasian	$10^{th} - 11^{th}$	1.73 – 4.04	1
F	Hispanic	$9^{th} - 10^{th}$	3.65 – 2.73	2
M	Caucasian	$10^{th} - 11^{th}$	2.77 – 2.23	2
F	Caucasian	$9^{th} - 10^{th}$	3.17 – 4.13	3
F	Caucasian/Asian	$9^{th} - 10^{th}$	2.65 – 3.81	3
F	Caucasian	$10^{th} - 11^{th}$	4.67 – 4.63	4
F	Caucasian	$9^{th} - 10^{th}$	4.73 – 4.56	4

An important component of the study ensures confidentiality of the participant. The researcher did not have access to individual student information or what criteria category (research question) the student represented while conducting the qualitative interviews. The students were from multiple sites. Interviews for the study were conducted separately in a comfortable office at the school or in homes. The female Hispanic student identified for question 2 was sexually abstinent at the time of the follow-up test, however; became sexually active by the time of the interview. Therefore; it was determined that the qualitative results for this student should be reported in results from question 4.

Informed and active parental consent and teen assent were required to participate in the interview segment (Appendix B). Information was collected from the students and independently from parents or guardians. Student and parent participants for this component were given a $25 stipend for their interview time. Interviews were tape recorded for accuracy of transcription. In the event that parents could not be contacted or if they did not want to participate, a new case from the same category was identified.

Qualitative Interviews

Questions for Adolescents

The following questions assisted in building a profile of the individual student. Information about family demographics, use of time, and attitudes toward school provided depth and confirmation or disconfirmation of known protective factors, risk factors, or assets for each student profile. General perceptions of the health teacher and the student's perceived relationship with the health teacher as well as other influences affecting the student's past 12 months were explored with the following questions:

Tell me about yourself and your family. How many siblings do you have?

What do you like to do in your spare time?

Tell me about school, how's it going?

What is your favorite subject? Why?

What is your least favorite subject? Why?

How is it going in terms of your grades?

What do you want to do when you get out of high school?

On a scale from 1 to 10, 1 being the worst year ever, 10 being the best year ever, how would you rate the 2003 – 2004, and 2004 – 2005 school years?

Were there any significant events in your life that occurred in 2003 – 2004, and 2004 – 2005 school years? For example, did you do something that was awesome or outstanding like a great season with athletics or other school event? Or, if you want to, tell me if something hard happened like a death, divorce, or other traumatic event. (Remember, you don't have to tell me anything that may make you uncomfortable.)

What was the most positive thing/event that occurred in you life 2003-2004?

Do you remember the health and sexuality education class you took last year with _____?

Describe your health class.

What do you remember about your health teacher?

Are you in a dating relationship at this time? (If yes, proceed to next question)

Did you apply anything that you learned to your romantic or dating relationships during the last 12 months?

After answering the student questions, students were asked to complete a short (60 question) survey that measures emotional intelligence (BarOn & Parker, 2000). Emotional intelligence scales are useful for practitioners in order to plan cessation interventions or maintenance strategies. The BarOn EQ-i youth version was normed on a sample of over 9,000 children and teenagers from elementary, junior high and high schools in the United States and Canada. Impara and Plake (2001) reported that the BarOn EQ-i was a reliable instrument (see α coefficients below) useful in measuring aspects of emotional intelligence. Test-retest (n = 60) for the total EQ scale was .89. This inventory contains 5-point Likert scales ranging from 1 (*very seldom or not true of me*) to 5 (*very often true of me)* or (*true of me)*. The BarOn EQ-i contains the following composite scales:

1. Intrapersonal Scales: Emotional Self-Awareness, Assertiveness, Self-Regard, Self-actualization, and Independence (males = α .82; females = α .85).

2. Interpersonal Scales: Interpersonal Relationship, Social Responsibility, and Empathy (males = α .83; females = α .82).
3. Adaptability Scales: Problem Solving, Reality Testing, and Flexibility (males = α .87; females = α .87).
4. Stress Management: Stress Tolerance, and Impulse Control (males = α .89; females = α .88).
5. General Mood: Happiness and Optimism (males = α .87; females = α .89).
6. Total EQ: Includes all scales (males = α .90; females = α .90)

Questions for Parents

These questions provided insight into the parents' perceptions of the student over the past 12 months. Information about general family connectedness provided depth and confirmation or disconfirmation of protective and risk factors.

Tell me about your family.

What does your family like to do in your spare time for fun?

What are ways that you connect with your teenager?

What do you find difficult with respect to parenting your teenager?

On a scale of 1 to 10, 1 being the worst year ever and 10 being the best year ever, how would you describe this past year for you? For your family? For your teenager?

On a scale of 1 to 10, 1 being very distant, and 10 being very close, how would you describe your relationship with your teenager?

Your teenager participated in a health education class last year; do you remember anything about it?

Did your teenager ever discuss the topics or content of that curriculum?

Anything else you would like to share about your teenager?

After answering the interview questions parents were asked to circle the assets that they perceive the child maintains. The asset check list is in Appendix A.

Data Analysis Strategies and Methods

This study examines two hypotheses: (1) Adolescents who receive a (9-week or 15 day) character-based sexuality curriculum (*WAIT Training*) from a 'specialist' or 'regular' teacher change more positively than students not receiving the curriculum with respect to correlates of behavioral intentions toward sex, and (2) Adolescents who receive character-based sexuality education (*WAIT Training*) have lower risk than students in the comparison group (non-*WAIT Training*).

Quantitative Data Analysis

The quantitative data analysis for each of these hypotheses incorporated 3 x 2 repeated measures (mixed) ANOVA. For the purposes of understanding the impact of the overall curriculum on the attitudes and intentions of program participants' three groups were utilized: 'specialist' teacher (*WAIT Training*), 'regular' teacher (*WAIT Training*), and a comparison. However, initial analysis of groups by teacher type revealed that the 'specialist' teacher group had fewer 9th graders than the other two groups, so the most meaningful analyses of follow-up behavioral data used only the fourth group, taught by a 'regular' teacher for 12-month self-reported behavioral data. This adjustment was made because older adolescents are more likely to become sexually active (Kirby, 2001). Transition rates over 12 months will be completed after a data collection in the fall of 2005 and are not reported in this report. Analyses were then conducted using 2 x 2 repeated measures (mixed) ANOVA comparing only the program and comparison groups

that were most closely matched. The linkage rates are listed in Table 11. These rates range from 59 % to 65% from pretest to follow-up.

Table 11

Linkage Rates For Groups by Teacher Type

Group	# of 03-04 pretests (Baseline)	# of 04-05 pretests (Follow-up)	Links	pretests linked to follow-up	follow-ups linked to post test
Specialist	98	68	64	65%	94%
Regular	314	213	203	65%	95%
Comparison	70	44	41	59%	93%

Qualitative Data Analysis

The qualitative data was analyzed using constant comparative analysis (Glaser & Strauss, 1967) and categorical aggregation (a collection of instances from the data) in order to highlight any emerging issue or relevant meanings (Creswell, 1998). Naturalistic generalizations will assist the researcher to learn from the case and apply the new knowledge to the general population. These generalizations provide a holistic analysis using multiple sources of data, including interviews with at least one parent and the student. Interviews were transcribed. Transcripts were analyzed by using the "open coding" method (Glaser, 1978; Strauss, 1987; Strauss & Corbin, 1990). Close attention was paid to codes that generated concepts related to the "conditions, interactions among actors, strategies and tactics, and consequences" of interest to this research (Strauss, 1987, pp. 27-28). The open codes were examined to find relationships that inductively elevate the codes to axial codes (Hutchinson, 1988). The concepts produced by the axial codes were analyzed across participants in an effort to identify common variables in each

research question. The axial codes were reported in combination with the assets profile completed by the parent and the emotional intelligence profile and composite scores for each adolescent. (See Appendix C)

CHAPTER 4: ANALYSIS AND RESULTS

Chapter four presents the results and the analysis in response to the research hypotheses in chapter one. Each hypothesis will be stated and then the statistical results and their interpretation will be provided. The quantitative results will be reported first, followed by the qualitative results.

Quantitative Results

Results from the first hypothesis were analyzed using 3 x 2 repeated measures ANOVA of the pre and post tests for spring and fall of 2004 and are displayed.

Results Relating to Pretest – Posttest Hypothesis

The following tables represent the treatment by time interaction effect as well as the simple main effects for each group separately. Data were analyzed by a 3 × 2 repeated measures (mixed) ANOVA of teacher type (specialist, regular, comparison) × time. The tables display the amount and direction of change in each group, and they also show the interaction of pre- to posttest change in each program group with the amount of change in the comparison school on each of the six constructs. Effect size for each significant F is also reported.

Scores on affirmation of abstinence indicates significant differences in the simple main effects of pre to post change in affirmation of abstinence for both the 'specialist' teacher and the 'regular' teacher. (See Table 12)

Table 12

Change in the Program Schools with the Amount of Change in the Comparison School-Affirmation of Abstinence

Short Term Measures Affirmation of Abstinence (HB)	*M* pre – *M* post	SS	*df*	*F*	*p*	*d*
Simple Main Effects						
Specialist Teacher	3.06 –3.56	21.50	1, 174	86.35***	.000	1.04
Regular Teacher	3.31 –3.57	15.34	1, 451	61.59***	.000	.74
Comparison	3.21 –3.32	.83	1, 149	3.32	ns	
Interaction						
Specialist × Comp.		6.17	1, 323	25.19***	.000	.56
Regular × Comp.		1.36	1, 600	5.76*	.017	.23

Note. HB means higher score is better, Constructs were measured on a Likert 5-point scale, $*p < .05$, $**p < .01$, $***p < .001$. Degrees of freedom vary due to linkage rates.

The table also shows that there were significant interaction effects for each group. Alpha was set at .05. Univariate and multivariate skewness statistics were within acceptable limits. Thus, both program groups had significant positive changes in affirmation of abstinence from pre - to posttest, with large to very large effect sizes according to Cohen (1988). However, the comparison group mean also increased but not significantly. The significant interactions indicate that each program group demonstrated more positive change on affirmation of abstinence than the comparison group with the 'specialist' teacher having a larger effect ($d = .56$) than the group taught by the 'regular' teacher ($d = .23$).

For scores on personal efficacy differences were found in the simple main effects of all three groups (see Table 13).

Table 13

Change in the Program Schools with the Amount of Change in the Comparison School-Personal Efficacy

Personal Efficacy (HB)	*M* pre – *M* post	SS	*df*	*F*	*p*	*d*
Simple Main Effects						
Specialist Teacher	3.61 – 3.88	6.36	1, 180	23.21***	.000	.53
Regular Teacher	3.76 – 3.90	4.08	1, 468	14.89***	.000	.36
Comparison	3.59 – 3.77	2.30	1, 151	8.39**	.004	.26
Interaction						
Specialist × Comp.		.34	1, 331	1.29	ns	
Regular × Comp.		.10	1, 619	.36	ns	

Note. HB means higher score is better, Constructs were measured on a 5-point scale, *$p < .05$, **$p < .01$, ***$p < .001$. Degrees of freedom vary due to linkage rates.

Both program groups demonstrated more positive change than the comparison group on personal efficacy, with the group taught by the 'specialist' reaching a greater effect than the group taught by the 'regular' teacher. However, the comparison group also improved significantly between pre and posttest. This may be an indication of "spill-over" due to the teacher of the comparison group attending the *WAIT Training* teacher training but delaying the actual implementation of the program. It may also mean that the comparison group curriculum was effective for this construct.

In terms of independence from peer influence no significant differences for either simple main effects or interaction effects were found (Table 14).

Table 14

Change in the Program Schools with the Amount of Change in the Comparison School-Independence from Peer Influence

Independence from Peer Influence (HB)	*M* pre – *M* post	SS	*df*	*F*	*p*	*d*
Simple Main Effects						
Specialist Teacher	3.89 –3.93	.11	1, 181	.55	ns	
Regular Teacher	3.94 –3.98	.33	1, 467	1.59	ns	
Comparison	3.76 –3.80	.12	1, 151	.58	ns	
Interaction						
Specialist × Comp.		.00	1, 332	.00	ns	
Regular × Comp.		.00	1, 618	.00	ns	

Note. HB means higher score is better. Degrees of freedom vary due to linkage rates. Constructs were measured on a 5-point scale.

Future orientation (see Table 15) did differ significantly on the simple main effects of both program groups, and interaction effects for the both teacher types. Both program groups had significant positive changes on future orientation from pre - to posttest, with very large effect sizes. The interaction for the 'specialist' teacher was significant and reached a greater than medium effect size.

As to justification for sex (see Table 16), significant differences in simple main effects of both teacher types, 'specialist,' and 'regular,' were observed. The 'specialist'

teacher demonstrated more positive change on justification for sex than the comparison group.

Table 15

Change in the Program Schools with the Amount of Change in the Comparison School-Future Orientation

Future Orientation (LB)	*M* pre – *M* post	SS	*df*	*F*	*p*	*d*
Simple Main Effects						
Specialist Teacher	2.97 –2.44	25.28	1, 180	95.90***	.000	1.08
Regular Teacher	2.93 –2.57	30.15	1, 467	114.38***	.000	1.00
Comparison	2.73 –2.75	.02	1, 151	.09	ns	
Interaction						
Specialist × Comp.		12.32	1, 331	47.92***	.000	.77
Regular × Comp.		8.13	1, 618	31.10***	.000	.52

Note. LB means lower score is better. Constructs were measured on a 4-point scale, $*p < .05$, $**p < .01$, $***p < .001$. Degrees of freedom vary due to linkage rates.

Scores on behavioral intention (Table 17) indicate significant simple main effects in the desired direction for both teacher types and the comparison group, with the 'specialist' teacher achieving a somewhat stronger effect ($d = .61$) than the group taught by the 'regular' teacher ($d = .33$). Interaction effects were not found with any group. The 'specialist' demonstrated somewhat more positive change than the comparison group on behavioral intention; however, that difference was not significant ($p = .085$).

Table 16

Change in the Program Schools with the Amount of Change in the Comparison School-Justification for Sex

Justification for sex (LB)	*M* pre – *M* post	SS	*df*	*F*	*p*	*d*
Simple Main Effects						
Specialist Teacher	2.55–2.21	10.79	1, 181	50.98***	.000	.79
Regular Teacher	2.50 –2.31	8.62	1, 468	40.73***	.000	.60
Comparison	2.48 –2.40	.54	1, 151	2.56	ns	
Interaction						
Specialist × Comp.		2.80	1, 332	13.00***	.000	.40
Regular × Comp.		.66	1, 619	3.12	ns	

Note. LB means lower score is better. Constructs were measured on a 5-point scale, $*p < .05$, $**p < .01$, $***p < .001$. Degrees of freedom vary due to linkage rates.

Table 17

Change in the Program Schools with the Amount of Change in the Comparison School-Behavioral Intentions

Behavioral Intentions (LB)	*M* pre – *M* post	SS	*df*	*F*	*p*	*d*
Simple Main Effects						
Specialist Teacher	2.89 –2.57	10.79	1, 179	30.19***	.000	.61
Regular Teacher	2.76 –2.63	8.62	1, 458	12.47***	.000	.33
Comparison	2.84 –2.67	.54	1, 149	7.13**	.008	.26
Interaction						
Specialist × Comp.		.91	1, 328	2.99	ns	
Regular × Comp.			1, 607	.33	ns	

Note. LB means lower score is better. Constructs were measured on a 4-point scale, $*p < .05$, $**p < .01$, $***p < .001$. Degrees of freedom vary due to linkage rates.

Follow-Up Scores after 12 Months

Students were separated by teacher type: 'specialist' teacher versus 'regular' teacher. Initial analysis of groups by teacher included all cohorts in the sample. Mean scores for risk composites (affirmation of abstinence, justification, personal efficacy, and behavioral intention) are reported for pretest virgins in Table 18. There was virtually no difference between the virgins in the three different conditions in terms of risk scores at posttest. The risk composite scores for the 'specialist' teacher group gained the most from pre - to post test during the course of the class, and also lost the most over

12 months. However; those scores after 12 months were 11 points higher than the initial pretest mean score, nearly 3 times the gains of the 'regular' teacher or the comparison group (Table 18).

Table 18

Mean Scores for Risk Index Composites for Pretest Virgins

Group	Pre	Post	Gain	Follow-up	Gain
Specialist $n = 166$	3.32	3.80	.48	3.43	.11
Regular $n = 527$	3.73	3.88	.15	3.76	.03
Comparison $n = 114$	3.72	3.81	.09	3.75	.03

Note. For composite scores, higher is better.

Originally, the researcher assumed all the health courses consisted of mostly 9th grade students. A careful review of the data revealed fewer 9th grade students in the 'specialist' group. In order to test the second hypothesis of this study, it was determined that a supplemental analysis of the most closely matched groups was necessary to determine the relative long-term (12 month) impact of the primary prevention. Transition rates over 12 months will be complete in the fall of 2005, and will not be reported for this report. A 2 x 2 repeated measures ANOVA was conducted on the groups with the closest demographic match from pre to follow-up. Demographic differences among each participating school are described in Table 19. These data were necessary in order to find a closer match according to demographics of the group.

Comparison of matched groups. Results from a 2 x 2 repeated measures (mixed) ANOVA from pretest to follow-up for the most closely matched groups ('regular' teacher school #4 and comparison school), as well as mean scores on the risk composite variable are discussed next.

Tables 20 and 21 show three differences in main effects were statistically significant from pretest to follow-up tests. For personal efficacy, $F(1, 121) = 18.70$, $p < .001$, $d = .83$, this was a large positive effect according to Cohen (1988), but the comparison group moved somewhat but not significantly more in the desired direction than the program group.

For future orientation, $F(1, 119) = 3.92$, $p = .05$, $d = .39$, there was a greater than small effect according to Cohen (1988), but in the undesired direction, apparently mostly due to the comparison group.

Table 19

Demographics of School Populations by School and Group Type

School	% Males	% Fem.	% Cauc.	% Hispan.	% Black	% Other	% in 9th Grade	% Sex. Active
School #1 Specialist $n = 68$	42	58	82	13	3%	2	49	32
School #2 Specialist $n = 43$	60	40	83	4.8	0	12	0	21
School #3 Regular $n = 226$	50	50	45	33	3	19	48	33
School #4 Regular $n = 139$	37	63	59	36	4	1	84	27
Comparison School $n = 74$	43	57	53	44	2	1	95	28

For justification for sex, $F(1, 118) = 12.81, p = .001, d = .69$, a medium effect according to Cohen (1988), but the program and comparison groups changed about equally in the desired direction.

Another strategy in understanding program effects over time is to analyze risk composite scores. Table 22 shows there were relatively few changes from pre - to post - to follow-up for both school #4 and the comparison group.

Table 20

Pre to Follow-up Program School #4 and Comparison School

Short Term Measures	*M* Pre- *M* *F*	SS	*df*	*F*	*p*	*d*
Affirm. of Abstinence (HB)						
Main Effects						
Pre to Follow-up		.168	1, 121	.370	ns	
Program	3.79 –3.78					
Comparison	3.12 –3.02					
Interaction Effects						
Pre to Follow-up × School		.127	1, 121	.281	ns	
Personal Efficacy (HB)						
Main Effects						
Pre to Follow-up		4.28	1, 121	18.70***	.000	.83
Program	4.00 –4.17					
Comparison	3.68 –4.01					
Interaction Effects						
Pre to Follow-up× School		.676	1, 121	2.96	ns	
Indep. from Peers (HB)						
Main Effects						
Pre to Follow-up		.526	1, 121	2.10	ns	
Program	4.07 –4.15					
Comparison	3.84 –3.96					
Interaction Effects						
Pre to Follow-up × School		.010	1, 121	.041	ns	

Note. HB means higher score is better, $*p < .05$, $**p < .01$, $***p < .001$. Degrees of freedom vary due to linkage rates.

Table 21

Pre to Follow-up Program School #4 and Comparison School

Short Term Measures	*M Pre – M F*	SS	*df*	*F*	*p*	*d*
Future Orientation (LB)						
Main Effects						
Pre to Follow-up		1.08	1, 119	3.92*	.05	.39
Program	2.55 –2.65					
Comparison	2.89 –3.07					
Interaction Effects						
Pre to Follow-up × School		.072	1, 119	.274	ns	
Justification for sex (LB)						
Main Effects						
Pre to Follow-up		2.94	1, 118	12.81**	.001	.69
Program	2.07 – 1.85					
Comparison	2.52 – 2.28					
Interaction Effects						
Pre to Follow- up × School		.004	1, 118	.017	ns	
Behavioral Intention (LB)						
Main Effects						
Pre to Follow-up		.919	1, 118	2.02	ns	
Program	2.30 – 2.35					
Comparison	2.72 – 2.94					
Interaction Effects						
Pre to Follow-up ×School		.352	1, 118	.775	ns	

Note. LB means lower score is better, *$p < .05$, **$p < .01$, ***$p < .001$. Degrees of freedom vary due to linkage rates.

Table 22

Mean Scores for Risk Composites for Pretest Virgins

School	Pre	Post	Follow-up
School #4 (Regular) $n = 139$	4.08	4.15	4.03
Comparison School $n = 74$	3.71	3.81	3.75

Note. For composite scores, higher is better.

Qualitative and Quantitative Interview Results

To answer the qualitative questions, a study of selected cases was conducted by interviewing adolescents and their parents who fit into one of the four categories described in Chapter 3. A variable used in the classification was the level of opportunity. All eight cases were selected that indicated a score of 5 on the opportunity variable (see p. 67). These students perceived that they had high levels of opportunity for sexual relationships over the past year. Composite scores on four subscales (affirmation of abstinence, justification for sex, personal efficacy, and behavioral intentions) were used to select cases that fit each of the four categories of research questions. Quantitative student profiles for the four outcome categories are displayed (see Table 23) and discussed in the next section.

In addition, constant comparative analysis (Glaser & Strauss, 1967) of the qualitative portion of the interview was conducted to (a) identify relationships between the parent and adolescent (family connectedness), (b) parental expectations (Blum & Rinehart, 1997), and (c) students' perception of the health class that delivered the *WAIT Training* program, as well as other factors that may have contributed to the success of the curriculum. A total of 16 interviews were conducted: eight adolescents and eight parents. Furthermore, supplemental information regarding youth assets and composite scores for emotional intelligence were gathered from each pair. For the purposes of this research, the term 'family connectedness' was demonstrated by statements about activities that promote togetherness and unity of the family unit such as sharing dinner together, vacations, and activities. Clear expectations about sexual behavior were indicated by statements from parents about their hopes for their children and efforts to promote sexual

abstinence with family rules, expectations and guidelines, as well as parental follow-up if rules were broken. If general expectations for achievement were related more toward academic performance then they were described as academic expectations. A summary of student risk composite scores, EQ scores and asset scores is provided in Table 23.

Each of the eight students will be discussed in the order shown in Tables 25 - 27. Descriptions of the student's profile and data from the table will be followed with discussion of the qualitative interview for that student.

Table 23

Student Follow-up and Composite Scores for Categories One and Two Abstinent at Follow-up

Case #	Categ. #	Gen.	Race	Pre	Post	Follow up	EQ scores		Asset score
8	1	F	Cauc.	3.29	4.56	3.83**	Composite	119	63%
	p→pst +						Intrapersonal	113	
							Interpersonal	109	
							Stress Man.	113	
							Adaptability	111	
							Gen. Mood	108	
							Pos. Imp.	112	
2	1	M	Cauc.	1.73	4.04	2.35	Composite	117	53%
	p→pst +						Intrapersonal	112	
							Interpersonal	116	
							Stress Man.*	89	
							Adaptability	125	
							Gen. Mood	113	
							Pos. Imp.	118	
7	2	M	Cauc.	2.77	2.23	1.98	Composite	117	55%
	p→pst -						Intrapersonal	109	
							Interpersonal	119	
							Stress Man.	123	
							Adaptability	93	
							Gen. Mood	121	
							Pos. Imp.	107	

Note. * Low score for age and gender. **Missing a response on composite scale.

Table 24

Student Follow-up and Composite Scores for Category Three Sexually Active at Follow-up

Case #	Categ.	Gen	Race	Pre	Post	Follow up	EQ scores		Asset score
3	3	F	Cauc.	3.17	4.13	2.33	Composite	108	30%
	p→pst +						Intrapersonal	116	
							Interpersonal	93	
							Stress Man.	106	
							Adaptability	94	
							Gen. Mood	110	
							Pos. Imp.	95	
5	3	F	Cauc.	2.65	3.81	3.60	Composite	125	53%
	p→pst +						Intrapersonal	127	
							Interpersonal	116	
							Stress Man.	91	
							Adaptability	130	
							Gen. Mood	125	
							Pos. Imp.	118	

Table 25

Student Follow-up and Composite Scores for Category Four Sexually Active at Follow-up

Case #	Categ #	Gen	Race	Pre	Post	Follow up	EQ scores		Asset score
1	2 - 4	F	Hisp	3.65	2.73	2.65	Composite [1]	84	83%
	p→pst -		.				Intrapersonal	98	
							Interpersonal	96	
							Stress Man.[1]	86	
							Adaptability[1]	76	
							Gen. Mood [1]	84	
							Pos. Imp. [1]	66	
4	4	F	Cauc	4.67	4.63	3.44	Composite	121	83%
	p→pst -		.				Intrapersonal	119	
							Interpersonal	106	
							Stress Man.	115	
							Adaptability	107	
							Gen. Mood	119	
							Pos. Imp.	101	
6	4	F	Cauc	4.73	4.56	3.83	Composite	101	38%
	p→pst -		.				Intrapersonal[1]	76	
							Interpersonal	103	
							Stress Man.	106	
							Adaptability	125	
							Gen. Mood[1]	88	
							Pos. Imp.	88	

Note. [1] Low score for gender and age

Category One Sexually Abstinent

What are the characteristics of students who had the strongest positive movement between the pre and post-test and maintained sexual abstinence after 12 months?

Case #8-student profile. This is a Caucasian adolescent female, age 17 from a stable, two parent middle class family. Both parents work full time. On the EQ-i, this

student had an elevated positive impression score of 112, so she may have overly positive responses. This may also be an indication of self-deception or lack of self-awareness. The total Emotional Quotient (EQ) composite score was 119, high for her age group. All subscales were average or high with the exception of stress management. The asset checklist (Benson, Galbraith & Espeland, 1998) indicated that the mother's perception of her daughter's developmental assets was 63%. Nationally, the average score according to the Search Institute is 40% (Benson, Galbraith & Espeland, 1998).

Case #2- student profile. An adolescent male, age 17 from a stable, two-parent middle class family. The mother works part-time and father works full-time. This student had an elevated positive impression score of 118, so he may have overly positive responses on the EQ-i. This may also be an indication of self-deception or lack of self-awareness. Total EQ composite score was 119, high for his age group. All subscales were average or high. The asset checklist (Benson, et al, 1998) indicated that the mother's perception of her son's developmental assets was 53%.

Qualitative interviews. The mother in Case #8 indicated that this year had been very difficult, a 1 on a scale of 1 – 10. Her main reason was because of her daughter's constant testing of boundaries – especially related to the new freedom she has with a car and a driver's license. This parent reported high levels of expectations for behaviors, high levels of connectedness activities, specifically dinner time and vacation time, and high levels of youth activities.

The female student (Case #8) recalled more detailed information about the *WAIT Training* course than the male. The female adolescent and her parent specifically recalled a guest speaker who was HIV positive.

The mother of the adolescent in Case #2 reported high expectations and follow-through on boundaries. She indicated the past year was about average. High levels of connectedness were reported with an emphasis on dinner time. The parent recalled multiple components of abstinence intervention within the school such as youth mentoring and booster activities.

Common themes between both of these parents and their children included boundaries with follow-through, clear and definite expectations for behavior, as well as high levels of connectedness. Both parents reported feeling exhausted from their constant testing of boundaries as well as manipulation. An emphasis on promoting connectedness around dinner time was also common between these two cases.

Both adolescents had positive impressions of the course. The male adolescent and his mother recalled that he was tired of hearing about abstinence from both the health curriculum as well as a separate program in the school conducting mentoring and peer support.

Category Two Sexually Abstinent

What are the characteristics of students who moved in an undesirable direction away from sexual abstinence between pre and post-test, but maintained sexual abstinence after 12 months?

Case #7-student profile. Caucasian adolescent male, age 17 from a two-parent stable middle class family. This student had a positive impression score of 107 an average score indicating the student is not giving an overly positive or negative impression of himself. He scored in the average range for intrapersonal skills and adaptability skills. All other subscales were high or very high. The asset checklist

(Benson et al, 1998) indicated that the father's perception of his son's developmental assets was 55%, above average.

Qualitative interview. The father and son from Case #7 did not recall any specific details about the course or the curriculum. During the parent interview the father reported high levels of emotional safety and connectedness, high standards, and clear and definite boundaries. Additionally, the father reported positive youth activities, positive future orientation as well as future goals. This parent reported implementing clear boundaries, and communicating high standards and expectations for behavior. The father told a story of a conversation he had with his son driving in the car. "I have showed him, you don't do this and don't do that, and this is how you treat ladies. The other day we were going down the street and he is always looking at girls, obviously, and there was this one pretty gal in the car next to us and he was checking her out, she pulled out a cigarette, and he wasn't interested anymore."

Category Three Sexually Active

What are the characteristics of students who had strong gains between pre and post-test but initiated sexual activity after 12 months?

Case #3-student profile. Caucasian adolescent female, age 17 from a two parent unstable lower middle-class family. This student had an average positive impression score of 95 indicating she was responding realistically to the survey questions. Total EQ composite score was 121, high for her age group. All subscales were average or high. The asset checklist (Benson et al, 1998) indicated that the father's perception of his daughter's developmental assets was 30%, below average.

Case #5-student profile. Caucasian adolescent female, age 16 from a stable, blended two-parent middle-class family. This student had an elevated positive impression score of 118 indicating she had overly positive responses on the EQ-i. All subscales were high or markedly high except for stress management, which was average for her age group. The asset checklist (Benson et al., 1998) indicated that the mother's perception of her daughter's developmental assets was 53%, above average.

Qualitative interviews. In Case #3, the father reported high levels of substance abuse and violence in the home. He also reported high levels of marital conflict. He seemed to have "given up" on his daughter stating that, "she has never had boundaries." He recalled frustration with his daughter's lack of respect for him. He felt at times that his wife was trying to be their daughter's friend, and she would try to manipulate situations by pitting him against his daughter. He reported that his daughter had been put on antidepressants and that his wife was also on medication. He attributed a "better year than it's ever been" for their family to the medication. The father reported low levels of connectedness with his daughter. He stated that his daughter was dating a man 20 years old and in college. He said that when his daughter went to the doctor for treatment of acne, she was put on birth control pills and became sexually active. He was supportive of the relationship because the boyfriend was good about giving her goals and providing a model of a stable family relationship from his family. He said that his daughter was spending a lot of time with the boyfriend's family and that he believed she liked being around a model of a healthy family and marriage.

The student reported low levels of current academic achievement as well as a lower than average freshman and sophomore years (2 on a scale of 1 – 10). She

attributed her alcohol abuse to the problems she was experiencing. She also indicated she used to be involved with school sports but had recently dropped out. She worked 35 hours per week, and liked participating in a summer volleyball league where she experienced success with their competitions.

Her father could not recall any details of the class; however, the adolescent reported a negative classroom climate with "immature kids and a teacher that was always stressed out about something." When asked what she applied to her current dating relationship she recalled the teacher saying, "You don't want a baby, you don't want to regret it later or get an STD, how to protect yourself, and abstinence of course, don't do it." She did not recall the name of the curriculum as being *WAIT Training*.

In Case # 5, the mother reported high levels of connectedness including camping, 4-H activities, and shopping. She reported high levels of positive parenting with her former spouse, but that his standards for allowable media was somewhat more lenient than hers and this caused frustration and conflict at times. The mother reported frustration with the constant testing of boundaries. She indicated the past year was very bad because her oldest son (a high school senior) had gotten his girlfriend pregnant (her daughter's best friend). She and her daughter both felt her daughter's year was better than average, but stressful due to the turmoil of the friend's pregnancy. The mother recalled having nightly conversations about the class over dinner, but could not recall any details.

The student reported average to high academic achievement, and positive future goals. She was involved with many youth activities. This student recalled details about the *WAIT Training* class such as the positive classroom climate, a great teacher, the "busy

bed," and role playing. She said she had just recently broken up with her boyfriend. When asked what she would apply to future relationships from what she learned in the class, she said she would apply better boundaries in her future relationship. She revealed that abstinence is harder than what you do in class; however she did not have any recommendations for how the course could better meet the needs of the students.

Common themes for the interviews within this category included an absence of clear parental expectations. In each case, risk factors were introduced, such as an older sibling and best friend becoming sexually active. These variables had likely contributed to the decision to initiate sexual activity.

Category Four Sexually Active

What are the characteristics of students who moved away from sexual abstinence between the pre and post test and became sexually active by 12 months?

Case #1-student profile. At the time of the 12 month follow-up, this student had maintained abstinence; however, she had become sexually active by the time of the interview 4 weeks later. This case was a Hispanic adolescent female, age 17 from a two- parent blended family. This student had a positive impression score of 66, extremely low for her age group. This low score may indicate that the student is "faking bad," a perception that was supported by her mother. Total EQ was 84, low for her age group. This student scored in the average range for intrapersonal skills and interpersonal skills; however, all other subscales were low with the lowest on the adaptability subscale 76. The asset checklist (Benson et al., 1998) indicated that the mother's perception of her daughter's developmental assets was 83%, indicating this parent may have had an overly positive view (2 times higher than the national average) of her adolescent's assets. This

student maintained sexual abstinence over 12 months, but at the time of the follow-up interview, had become sexually active.

Case #4-student profile. Caucasian adolescent female, age 17 from a two-parent stable middle-class family. This student had an average positive impression score of 101, indicating this student was responding realistically to the survey questions. Total EQ composite score was 121, high for her age group. All subscales were average or high. The asset checklist (Benson et al., 1998) indicated that the mother's perception of her daughter's developmental assets was 83%, twice as high as the national average of 40%, and may be an indication of an overestimation of youth assets by the parent.

Case #6-student profile. Caucasian adolescent female, age 16 from a blended upper middle-class family. This student had a low positive impression score of 84, affected by the omission of one response. Total EQ composite score was 101, average for her age group. The intrapersonal subscale was 76, very low for her age group, and her general mood score was 88, low for her age group. The asset checklist (Benson et al., 1998) indicated that the mother's perception of her daughter's developmental assets were 38%, slightly lower than the national average.

Qualitative interviews. During the interview the mother in Case #1 indicated that her daughter views herself as the 'rebellious one' compared to her older sister. "My oldest child is an anomaly. She has vowed to be a virgin until marriage, she has never had alcohol, she is very much into religion and faith and wanting to keep that...My youngest daughter really looks up to her, and competes with her and rebels against her." The mother indicated that, "there are a lot of dynamics between them, and I am constantly trying to juggle the two. I call the youngest daughter on it when she tries to

compare herself with her older sister. I tell her you are the one doing that, no one else is doing that." This student scored low within the stress management, adaptability, and general mood subscales. The mother indicated that her daughter had recently become sexually active and that she took her to the doctor for birth control because she knew she was going to have sex. The mother thought it was ironic that we were conducting interviews on sexuality this week because they had just been through a pregnancy scare. The student reported high levels of stress due to jealousy in her romantic relationship. The stress (according to the adolescent) was causing 'acid reflux' for which she is receiving treatment. The mother indicated that her daughter and her boyfriend desired to become abstinent again, and this was confirmed by the adolescent. Even when her daughter expressed a desire to become abstinent again, her mother said she did not believe it was 'realistic.' This parent reported a nondirective approach to parenting, and was not supportive of a renewed commitment toward abstinence. Her mother added, "I remember how it was when I was a teenager."

When asked if she would implement anything she learned in the *WAIT Training*, the adolescent said, "The love test." The "love test" lesson challenges sexually active students to test their relationship by stopping the sexual aspect of their relationship in order to work on the emotional side of the relationship. The mother recalled several discussions about the course, specifically pregnancy information and STDs.

For Case #4, the mother reported high levels of connectedness that included parental expectations and connectedness through the family business, family farm and with family vacations. The mother reported using a nonjudgmental attitude toward sex and drinking. She stated that she lets her daughter practice "safe drinking" in the home,

stating that it is "her daughter's choice." The interview revealed positive communication between the parent and the adolescent as well as positive conflict resolution. Both the adolescent and the parent described a better than average year. The adolescent in Case #4 recalled the birth control unit of the health education course, a relevant topic for her because she is sexually active. When describing the relationship with her boyfriend she said, "We were friends and oops—he is my first boyfriend."

Parental expectations of sexual boundaries were unclear for Case #6. The step-mother in Case #6 reported high levels of connectedness through family vacations with dinner time mentioned as an opportunity to connect. Both the stepmother and adolescent reported involvement with positive youth activities. However, the adolescent in Case #6 reported experiencing significant loss because of the death of two friends as well as her sister's traumatic brain injury during the previous year. Unprocessed loss combined with low intrapersonal skills may have contributed to her decision to have sex. This student had a positive response to the class and specifically remembered the emphasis on knowing people without having sex and keeping dating relationships 'fun and light.' The student's stated, "the class was about abstinence until marriage. It helped a lot. It was presented very good. It helped in making that choice." These comments, combined with the topics she recalled, leads the researcher to believe she may have had one sexual experience but was not currently in a sexual relationship even though she was dating at the time of the interview.

Common themes for both parents and children in this category included high levels of connectedness between parents and their children. However, all the cases reported either an unclear parental expectation toward sexual activity or, as with Case # 1

and Case #4, a nonjudgmental attitude from the parent regarding choices. The parent in Case #4 also emphasized boundaries of 'safe sex' and 'safe drinking.' All students reported positive response to the class. The adolescents in Case # 1 and Case #6 recalled the HIV speaker as well as several components from the *WAIT Training* course. The adolescent in Case #4 recalled the contraceptive unit provided after the *WAIT Training* curriculum was implemented.

Summary of Qualitative Interview Results

Most studies of adolescent sexual risk behavior describe students as belonging to one of two groups—either sexually active or not sexually active. Little is known about the processes of beginning and discontinuing sexual activity for adolescents. These results shed light on other risk factors that influence adolescent decisions about sexual activity such as clear and consistent parental expectations of sexual boundaries and appropriate behavior, as well as relationships with siblings. Sibling rivalry, high levels of loss experienced over the past 12 months, or close friends and family members who were sexually active and experiencing a teen pregnancy, were likely to influence the sexual choices of these cases. Additionally, the high level of sibling rivalry reported in Case #1 may have played a role in the extremely low positive impression EQ score as well as her decision to have sex after the 12 month follow-up. A low EQ-i score may also be related to the recent pregnancy scare this adolescent had experienced the day prior to the interview.

Consistently, students recalled curriculum components most relevant to their current lives during each of the interviews. Two sexually active students, currently in relationships, recalled the birth control unit that was presented outside the scope of the

WAIT Training curriculum. One sexually active student recalled the 'boundary component' and the 'busy bed' activity. This particular student had recently ended a sexual relationship. Another sexually active student was put on birth control by her mother and had recently experienced a pregnancy scare. This student reported intense emotional distress from the sexual relationship and expressed a desire to become abstinent again. She recalled the "love test" component of *WAIT Training* that encourages sexually active students to stop having sex in order to test the relationship. Her mother indicated support for her daughter, but did not believe choosing abstinence again was realistic. The mother's attitude toward her daughter's desire to become abstinent again will likely be a barrier to a renewed commitment to abstinence.

Quantitative Student Profiles

Group differences between the three abstinent and five sexually active students on the EQ-i and assets checklist were not clear, but the EQ-i and assets checklist provide additional tools to help providers understand their adolescent clients. Rather than being useful for prediction of sexual activity, the EQ-i and assets checklist may assist with maintenance of sexual abstinence or in planning cessation strategies for sexually active adolescents. For example, students with low overall EQ-i composite scores may be more susceptible to depression from early sexual experiences. The interview data reveals how the adolescents' sexual experience should be viewed as a 'teachable moment,' and that adult attitudes may be a barrier to sexual cessation for these adolescents—especially parental attitudes. Practitioners may use the EQ-i tool to identify and practice specific skills likely to increase success with a renewed commitment to abstinence or to maintain sexual abstinence. Asset scores may specify strategies for sexually active adolescents.

Reestablishing abstinence again as well as increasing positive youth assets may simultaneously extinguish risky behaviors.

These qualitative results are summarized in Table 26. Students maintaining abstinence by the 12 month follow-up had parents who expressed clear boundaries and expectations about relationships.

Table 26

Overview of Qualitative Case Profiles

Category Case #	Evidence of Connectedness	Clear Boundaries and Expectations (Relationships)	Boundaries and Expectations (Academics)	Assets Score	EQ Score
Category 1					
#8	+	+	+	+	+
#2	+	+	+	+	+
Category 2					
#7	+	+	+	+	+
Category 3					
#3	-	-	-	-	+
#5	+	-	+	+	+
Category 4					
#1	+	-	-	+	-
#4	+	-	+	+	+
#6	+	-	+	-	+

Note. + indicates average or above average score or evidence provided in interview, - indicates a deficit or below average score or lack of evidence from interview.

Summary of Quantitative Results

Both the 'specialist' and 'regular' teachers at schools that offered the *WAIT Training* program moved students in a desirable direction on five of the six psychological indicators of abstinence. Furthermore, both *WAIT* groups improved more than a comparison school not offering the program on two of the six short term indicators: affirmation of abstinence and future orientation. Also, the 'specialist' teacher condition had a significant interaction (greater gain) on justification for sex, and approached

significance on behavioral intention (p = .085). Those effects were not maintained over 12 months as indicated by the pretest to follow-up data.

CHAPTER 5: DISCUSSION

In closing, summary statements are linked to previous research conducted on the topic of the study. Likewise the conclusions and implications are based on the results obtained and on the inferences drawn from these results.

Summary

The increase of funding for programs that emphasize abstinence has resulted in more schools adopting model programs that stress primary prevention as a recommended strategy for curbing the pandemic of STDs (Genuis & Genuis, 2004). Primary prevention forestalls the onset of illness or injury by addressing systemic environmental, familial, or generational conditions that increase the likelihood of risky sexual behaviors. Given the serious consequences of early onset of adolescent sexual activity, and the increase of federal allocations that encourage primary prevention, an understanding of effective delivery models is necessary to improve interventions. Similarly, the limited research that has been done typically reports the status of students as being either sexually active or not. Not well documented or understood are factors contributing to the process of initiation, discontinuation, and/or maintenance of adolescent sexual behavior.

The specific purposes of this study were to measure the impact of a school-based primary prevention approach to reducing sexual risk behavior of adolescents ages 15 to 17, and to compare teacher delivery (specialist vs. regular teacher) in public school settings. Additionally, this research explores the processes and dynamics of adolescent sexual behavior. This study describes how the use of one character-based sexuality

curriculum, known as *WAIT Training*, may contribute to the delay of sexual debut in adolescents. The sample was collected from five Colorado schools. Students who participated in *WAIT Training* were compared to students in a general health and sexuality program that did not offer the curriculum. The results may help to understand how both virgin and sexually active students respond to primary prevention programs such as *WAIT Training* and the *Art of Loving Well* as compared to typical comprehensive sexuality education programs. Another helpful insight from this study involves qualitative interviews with selected cases. The parents and students who received the program shared their insights into factors helpful to maintenance of sexual abstinence for adolescents as well as factors contributing to the transition into sexual activity over 12 months such as, clear parental boundaries and expectations. These results should be helpful to health educators and intervention specialists interested in preventing or delaying the onset of sexual activity in adolescents. An additional contribution to the field is the utilization of the BarOn EQ-i as a tool to isolate factors related to relationship skills necessary for maintenance or renegotiation of sexual boundaries.

Generally, studies about the effectiveness of sexuality education programs have achieved mixed results. Due to an absence of peer reviewed studies, no school-based programs have empirically proven a reduction in sexually transmitted diseases or adolescent pregnancy. To better understand programmatic efforts to date, three groups are required: (1) programs with a primary focus on disease prevention and specifically interested in increasing consistent and correct use of condoms: (2) programs specifically focused on reducing the consequences of adolescent sexual activity, specifically increasing contraceptive use including abstinence: (3) programs specifically interested in

the root causes of adolescent sexual activity including the outcomes of delaying the onset of sexual activity, reducing the number of sexual partners, or cessation for sexually active adolescents. This study relates to category 3 above. Results and discussion will be limited to the purposes of this category.

Hypothesis One

The main research question in this study was to determine the relative impact of the character-based curriculum known as *WAIT Training* as a school-based primary prevention intervention. The first hypothesis is restated below:

> Adolescents who receive a (9 week or 15 day) character-based curriculum *WAIT Training* from a 'specialist teacher' or 'regular' teacher change more positively than students not receiving the curriculum with respect to correlates of behavioral intentions toward sex.

The primary variables of interest included short-term correlates of sexual behavior. Overall, both the 'specialist' teacher and the 'regular' teacher *WAIT Training* groups had stronger movement in the desired direction than the comparison group on half of the constructs: affirmation of abstinence, future orientation, and justification for sex than the comparison program. The 'specialist' teacher moved students more in the desirable direction than the 'regular' teacher on two of the six short term indicators: affirmation of abstinence, as well as justification for sex, and achieved greater effect sizes. Also, the 'specialist' teacher group approached a significant interaction with the comparison group on behavioral intention. This finding is consistent with outcomes documented by DeGaston, Jenson, Weed, and Tanas (1994) because the teacher of the program affected student outcomes.

Further analyses are planned for the fall of 2005 to continue to explore this question.

Hypothesis Two

> Adolescents who receive character-based sexuality curriculum (*WAIT Training*) will have lower risk than students in the comparison group.

Students were separated by teacher type; 'specialist' teacher, and 'regular' teacher. This analysis included all cohorts in the sample. The analysis of the risk index score for pretest virgins found virtually no difference in posttest risk index scores between the three conditions, however; the specialist group gained more on this index than the other two groups (.48). By the time of the 12 month follow-up, the 'specialist' group dropped by .37 still .11 higher than their original pretest score. The other two groups 'regular' and comparison were .03 higher on the risk index score after 12 months.

Qualitative Questions

A common theme for students who maintained abstinence over 12 months in categories 1 and 2 was parental expectations. Parents reported boundaries with follow through, clear and definite expectations for behavior, as well as high levels of connectedness. Parents stated a feeling of exhaustion from their children's constant testing of boundaries and attempts at manipulation. Parents of students, who did not maintain abstinence in categories 3 and 4, did not report clear boundaries and expectations around teen sex. This finding is consistent with Kirby (2001).

Rather than providing a predictable relationship, the BarOn EQ-i inventory of emotional intelligence provided deeper insight into areas that need to be addressed when conducting primary prevention initiatives. One student who had experienced a sexual relationship over the 12 months of the study, but was abstinent at the time of the interview, scored low on the intrapersonal scale. It is likely that this student was unable to understand her own feelings and unable to express and communicate those feelings

and needs to others. Cessation counseling for this student should include practice in communication of her needs to others.

Another student had a low composite score of 84. The EQ deficits for this student included stress management and adaptability. This indicates that she is more vulnerable to impulsivity than adolescent females her age. She would benefit from exercises to develop realistic assessment of social situations and interpretation of her own feelings and the feelings of others. She also scored low in adaptability. Because she expressed a desire to become abstinent again, her cessation counseling should include assistance in finding positive ways of dealing with peer pressure as well as specific assistance in identifying social situations likely to maintain her goals of sexual abstinence. The low composite score on the EQ-i may be an indicator of the intense emotional anxiety she experienced with her sexual relationship. This could make her more vulnerable to severe depression when her sexual relationships end.

Parental perceptions of youth assets varied within every category. Students that remained abstinent over 12 months had perceived assets between 53% and 83%. Adolescents that transitioned into sexual activity had asset scores between 30% and 83%. The national average for youth assets is 40% (Benson, Galbraith & Espeland, 1998). The assets check list may be a helpful tool to use when counseling adolescents who want to remain abstinent or who may want to renew a commitment to an abstinent lifestyle until marriage because it can provide tangible ideas to replace risk behavior with healthier and more positive alternatives.

This study highlights the potential barrier parental attitudes may have on adolescents maintaining sexual abstinence or choosing to renew commitments to sexual

abstinence. Even when the adolescent in Case #1 (and her partner) reported an openness and a desire to practice sexual abstinence again, the mother was skeptical to this possibility. This student reported intense emotional distress over her current relationship and may be more likely to experience severe depression when her sexual relationships end due to her low EQ composite.

The patterns from pretest to follow-up are interesting to note. Most of the significant gains on future orientation from pre to post test were lost and both groups actually moved in the undesirable direction by follow-up, but the comparison group moved more in the undesirable direction than the program group.

Both groups moved the desirable direction over 12 months on justification for sex as well as personal efficacy with the comparison group maintaining the desirable movement more than the program group.

Conclusions

The *WAIT Training* program taught by both 'specialist' teachers and 'regular' health teachers makes strong short-term impact on constructs related to affirmation of abstinence, future orientation, as well as justification for sex.

Characteristics of adolescents who maintain sexual abstinence over 12 months may be closely attributed to clear boundaries, high expectations, and follow through by parents. Adolescents not maintaining sexual abstinence over 12 months may be influenced by the level of expectations for behavior communicated to them by their parents. Other factors that may contribute to transition into sexual activity over 12 months are loss experiences combined with low intrapersonal skills, as well as

relationships with siblings. Additionally, sexually active close friends or siblings may also influence sexual activity status.

The results indicate from that most of the large gains from the 'specialist' teacher group were lost over 12 months. Most of the gains from the 'regular' teacher group were retained over 12 months. Some contributing factors that may explain this pattern may be the increased processing time experienced in the 'regular' teacher group may help to build longer lasting pathways in the adolescent brain. The powerful gains of the 'specialist' teacher however, are double that of the 'regular' teacher with respect to the original pretest mean scores after 12 months.

A fall 2005 collection of data is planned in order to increase cell sizes in the 12 month follow-up sample. The results at that time may be more conclusive with respect to the hypotheses of this study.

Limitations

Many factors need to be considered in understanding the implications of this study. This study is limited by design because it was not possible in the setting to randomly assign public school students to groups, and then maintain their group membership or to eliminate group contamination. The relatively small sample size for some schools warrant another data collection in the fall of 2005 and further analysis.

Characteristics for participants lost to attrition were similar for all groups. However, the ability to generalize these findings is reduced because the attrition that did occur was in higher risk groups such as sexually active and Hispanic students. Families not agreeing to participate in the survey may have adolescents who are substantially

different than adolescents from families who agreed to participate. Additionally, it was not practical to measure students' previous sexuality education for this investigation.

Other investigations have found that self-reported sexual behaviors are highly correlated with sexual partner's reports of sexual activity and thus a valid measurement (Upchurch, Weisman, Shepherd, Brookmeyer, & Fox, 1991), however other studies have found under-reporting or over reporting of sexual behaviors producing measurement error or participation bias (Catania, Gibson, Chitwood, & Coates, 1990).

Confounding variables such as the impact of the one-day contraceptive component are unknown, however; it is not likely that this information significantly impacted behavior based on previous research (Kirby, 1991). The influence of the literature component used with the 'regular' teacher group is also unknown, and may have confounded the results between the 'specialist' teacher and the 'regular' teacher. Spill over of the program concepts and material into the comparison group may have occurred from the initial teacher training for *WAIT Training*. Even though the comparison teacher delayed the implementation of the program by two semesters in order to participate in the evaluation, the teacher training may have influenced how he delivered abstinence messages to the comparison group. Additionally, the influence of a video shown in the comparison group is likely to have contributed to the movement toward abstinence. The teacher showed a *Dr. Phil* talk show that exposed the epidemic of teenage oral sex. This video may have had a positive effect on both the affirmation of abstinence and personal efficacy toward abstinence in the comparison group as revealed in the short term indicators.

Results were also limited by the researcher's inability to measure the effects of the program on students reporting sexual activity at the time of pre-test. Data from sexually active students who became abstinent over the course of 12 months (discontinuance) would provide valuable information about cessation behavior of sexually active students; however, this study does not provide discontinuance information. One of the primary indicators for successful primary prevention is the reduction of multiple partners for adolescents reporting previous sexual activity. This information should be considered for future investigations.

Recommendations

For Programs

The *WAIT Training* curriculum did not move adolescents significantly on three key constructs (personal efficacy, independence from peer influence, and behavioral intentions) as compared to a comparison group. In order to maintain behavioral intention toward abstinence, *WAIT Training* teachers should influence students on all five predictors to make the desired impact on behavioral intentions. Therefore, teachers should receive feedback each semester from the program evaluator so they know how students are moving on each construct.

Personal efficacy is the belief that abstinence is possible and achievable. It includes performance accomplishment and modeling. Increasing the time spent on refusal skills may help increase personal efficacy toward abstinence for their students. Providing positive examples of youths choosing abstinence or renewing commitments to abstinence may help increase personal efficacy. Mentoring from adults and peers may be beneficial as well. For this study, the comparison group moved significantly in the

desired direction on personal efficacy, and the movement was maintained after 12 months. When the researcher interviewed the teacher of the comparison group it was revealed that he utilized a video from the *Dr. Phil* program about the epidemic of teenage oral sex. He also indicated that he teaches the program to target females in order to teach them about "how guys think." This strategy may have worked very well to increase self-efficacy toward abstinence due to the majority of females in the comparison group.

Independence from peer influence measures the degree to which adolescents make decisions independently from the influence of their peers. The *WAIT Training* curriculum needs to include activities that facilitate discussions related to independent decision making. Helping adolescents develop this critical skill will likely improve movement in the desirable direction. The questions that make up the independence from peer influence may need to be revised as well. The combination of the low alpha score ($\alpha = .48$), as well as the fact that none of the groups moved students on this measure leads this researcher to believe this construct may not be a valid measure or it may be extremely hard to move adolescents on this construct.

The teacher training model utilized for *WAIT Training* should be expanded to include specific information on short-term indicators related to behavioral outcomes. Follow-up with individual teachers could be improved by providing feedback on how individual students are moving on these short-term indicators. By increasing teacher awareness of predictors of behavioral intention, programs are likely to improve long-term impact on behavior.

Developing primary prevention strategies toward sexual abstinence for adolescents is a challenging task when adolescents are exposed to an ever increasing

sexualized environment. The Kaiser Family Foundation (2003) analyzed 59 episodes from television programs most frequently viewed by adolescents and found that the average number of scenes of sexual behavior is up 50% over the past four years. Davis and Mares (1998) documented more permissive attitudes toward premarital sex from media exposure. Therefore, in order to maintain the strong short-term impacts of the *WAIT Training* curriculum over 12 months, schools should implement multiple, long-term, sequential interventions throughout the school year promoting social norms, benefits of sexual abstinence for adolescents, and sexual abstinence until marriage (Cialdini, 2001; Perkins & Berkowitz, 1986). Planned, sequential primary prevention interventions may help to maintain the positive movement toward sexual abstinence provided by the *WAIT Training* program.

Similarly, students making virginity pledges have been found to delay the onset of sexual activity, have fewer multiple sexual partners, and a reduced incidence of sexually transmitted diseases (Blum & Rinehart, 1997; Rector & Johnson, 2005 a, b). Results from *WAIT Training* may be improved if the program implements a pledge component into the curriculum that includes planned recommitment and support for students making commitments toward sexual abstinence.

A dependency on quantitative outcomes that simply indicate a yes or no status with respect to sexual activity is not enough to evaluate the primary prevention of adolescent sexual risk behavior. The qualitative portion of this study began to explore the dynamics involved with adolescents' reasons to initiate, maintain or discontinue sexual activity. Health education project personnel should include opportunities for maintenance counseling for students desiring sexual abstinence and cessation counseling

for adolescents who are sexually active. The BarOn EQ-i inventory may be a helpful tool to use to identify specific areas of concern. Targeting maintenance and cessation activities with youth will help them reduce the number of sexual partners in their lifetime--the leading risk factor for acquiring sexually transmitted diseases. Cessation interventions should include both partners as well as the parents of both partners in order to remove any barriers that may exist with respect to parental attitudes. Likewise, developing sound relationship skills by practicing sexual abstinence is a viable generational goal of primary prevention and is consistent with the goals for longevity of marriage expressed by young singles (The National Marriage Project, 2000).

Further Research

Finding an appropriate comparison group is one of the most difficult challenges of this design. Future studies should run pretests with all potential samples prior to the selection of the comparison group in order to ensure equality in pretest mean scores. If a well matched comparison group is not available, another option would be to utilize logistic regression comparing program group outcomes with a similar population from the *Youth Risk Behavior Survey* (Lerner, 2005). Another option would be utilizing change scores.

More research should be conducted on the effectiveness of the EQ-i as a tool to develop skills associated with maintaining sexual abstinence in adolescence, as well as cessation interventions for sexually active youth. This research would assist practitioners to more effectively design and implement primary prevention interventions for youth.

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APPENDIX A: ASSETS CHECKLIST

WORKSHEET

Assessing Your Assets
(to be completed by parents)

Circle the assets you possess.

	Category	Asset Name and Definition
External Assets	**Support**	1. **Family Support** Family life provides high levels of love and support. 2. **Positive Family Communication** Young person and her or his parent(s) communicate positively, and young person is willing to seek advice and counsel from parents. 3. **Other Adult Relationships** Young person receives support from three or more nonparent adults. 4. **Caring Neighborhood** Young person experiences caring neighbors. 5. **Caring School Climate** School provides a caring, encouraging environment. 6. **Parent Involvement in Schooling** Parent(s) are actively involved in helping young person succeed in school.
	Empowerment	7. **Community Values Youth** Young person perceives that adults in the community value youth. 8. **Youth as Resources** Young people are given useful roles in the community. 9. **Service to Others** Young person serves in the community one hour or more per week. 10. **Safety** Young person feels safe at home, school and in the neighborhood.
	Boundaries & Expectations	11. **Family Boundaries** Family has clear rules and consequences and monitors the young person's whereabouts. 12. **School Boundaries** School provides clear rules and consequences. 13. **Neighborhood Boundaries** Neighbors take responsibility for monitoring young people's behavior. 14. **Adult Role Models** Parent(s) and other adults model positive, responsible behavior. 15. **Positive Peer Influence** Young person's best friends model responsible behavior. 16. **High Expectations** Both parent(s) and teachers encourage the young person to do well.
	Constructive Use of Time	17. **Creative Activities** Young person spends 3 or more hours per week in lessons or practice in music, theater or other arts. 18. **Youth Programs** Young person spends 3 or more hours per week in sports, clubs or organizations at school and/or in the community. 19. **Religious Community** Young person spends 1 or more hours per week in activities in a religious institution.
Internal Assets	**Commitment to Learning**	20. **Time at Home** Young person is out with friends "with nothing special to do" 2 or fewer nights per week. 21. **Achievement Motivation** Young person is motivated to do well in school. 22. **School Engagement** Young person is actively engaged in learning. 23. **Homework** Young person reports doing at least one hour of homework every school day. 24. **Bonding to School** Young person cares about her or his school. 25. **Reading for Pleasure** Young person reads for pleasure 3 or more hours per week. 26. **Caring** Young person places high value on helping other people.
	Positive Values	27. **Equality and Social Justice** Young person places high value on promoting equality and reducing hunger and poverty. 28. **Integrity** Young person acts on convictions and stands up for her or his beliefs. 29. **Honesty** Young person "tells the truth even when it is not easy." 30. **Responsibility** Young person accepts and takes personal responsibility. 31. **Restraint** Young person believes it is important not to be sexually active or to use alcohol or other drugs.
	Social Competencies	32. **Planning and Decision Making** Young person knows how to plan ahead and make choices. 33. **Interpersonal Competence** Young person has empathy, sensitivity and friendship skills. 34. **Cultural Competence** Young person has knowledge of and comfort with people of different cultural/racial/ethnic backgrounds. 35. **Resistance Skills** Young person can resist negative peer pressure and dangerous situations. 36. **Peaceful Conflict Resolution** Young person seeks to resolve conflict nonviolently.
	Positive Identity	37. **Personal Power** Young person feels he or she has control over "things that happen to me." 38. **Self-Esteem** Young person reports having a high self-esteem. 39. **Sense of Purpose** Young person reports that "my life has a purpose." 40. **Positive View of Personal Future** Young person is optimistic about her or his personal future

APPENDIX B: PARENTAL CONSENT STUDENT ASSENT FORM

Consent to Participate in a Research Study
Colorado State University

TITLE OF STUDY: *Character-based sexuality education: An impact evaluation*

PRINCIPAL INVESTIGATOR: *Dr. George Morgan, Ph.D. 970-491-1963, morgan@cahs.colostate.edu.*

CO-PRINCIPAL INVESTIGATOR: *Lisa Rue, M.Ed, 970-581-1142, Fax 970-532-4609.*

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? *You and your child are invited to participate because you took health education at school and participated in the WAIT Training curriculum*

WHO IS DOING THE STUDY? *Lisa Rue, a doctoral student at Colorado State University is doing the study.*

WHAT IS THE PURPOSE OF THIS STUDY? *To conduct follow-up interviews with some students and parents that participated in the health and sexuality curriculum known as WAIT Training.*

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The student interviews will take place in a comfortable office or classroom at the school. Parents and students will be interviewed separately. Each interview will last approximately 30 minutes - 1 hour.

WHAT WILL I BE ASKED TO DO? *You will be asked to answer some general questions about you, your family, overall impressions of the previous year and overall impressions of health class last year.*

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY?
There are no reasons, (other than not wanting to participate) that you should not take part in this study.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?
The risks of a breach of confidentiality are minimal due to the strict rules that apply to maintaining confidentiality of your answers and identity. It is not possible to identify all potential risks in research procedures, but the researcher(s) have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

WILL I BENEFIT FROM TAKING PART IN THIS STUDY? *You do not directly benefit from the interviews of this research, but who hope that you have benefited from participating in a program that provided skills and information related to making healthy choices.*

DO I HAVE TO TAKE PART IN THE STUDY? *Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.*

WHAT WILL IT COST ME TO PARTICIPATE? *Participation in this study is free. It will take approximately 30 minutes - 1 hour of your time.*

WHO WILL SEE THE INFORMATION THAT I GIVE?
We will keep private all research records that identify you, to the extent allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be identified in these written materials. We may publish the results of this study; however, we will keep you name and other identifying information private.

CONFIDENTIALITY
We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from your research records and these two things will be stored in different places under lock and key. The research team will use a confidential ID code and a pseudonym instead of your real name. You should know, however, that there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court or to tell authorities if we believe you have abused a child, or you pose a danger to yourself or someone else.

WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY? *As a token of our appreciation each participant, the parent and the student will receive $25.00 for a total of $50.00.*

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH? *The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.*

WHAT IF I HAVE QUESTIONS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Lisa Rue at 970-581-1142. If you have any questions about your rights as a volunteer in this research, contact Celia Walker, Director of Regulatory Compliance, at 970-491-1553. We will give you a copy of this consent form to take with you.

WHAT ELSE DO I NEED TO KNOW?

Your signature below acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing 3 pages.

_____ _____
Name of person providing information to participant Date

_____
Signature of Research Staff

PARENTAL CONSENT TO PARTICIPATE AND SIGNATURE FOR MINOR

I, parent or guardian of _____, am willing to become a participant for the described follow-up interviews for the health curriculum *WAIT Training and authorize* _____ (name of child) to become a participant. The nature and general purpose of the project have been satisfactorily explained to me by _____ and I am satisfied that proper precautions will be observed.

_____
Parent/Guardian name (printed)

_____ _____
Parent/Guardian signature Date

CHILD ASSENT TO PARTICIPATE

I _____(print name) am willing to become a participant for the described follow-up interviews for the health curriculum *WAIT Training*. The nature and general purpose of the project have been satisfactorily explained to me by _____ and I am satisfied that proper precautions will be observed.

_____
Minor's date of birth

_____
Child name (printed)

_____ _____
Child's signature Date

APPENDIX C: CODES

Open Codes

conflict with student, teach values, students and romantic relationships, ununified parents, peer group issues, never followed through with counseling, decision making, communication, lack of parental boundaries, parenting is difficult, parents unified, parental boundaries, siblings, future goals, perceptions of self, expectations, youth activities, positive classroom climate, student academic achievement, learning style, family activities, safety at home, student satisfaction, parent description of student

Axial Codes

family connectedness, clear boundaries and expectations (relationships), boundaries and expectations (academics), family descriptions, adult perceptions, contexts, peer relationships, significant events, stressors, activities, personal assessment, health education, student context, family description, parent orientation, parenting, student education