

**The Effectiveness of Sex Education Programs in Virginia Schools:
Teenage Pregnancy and Sexually Transmitted Disease Rates:
A Comparison of Counties**

By

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(ABSTRACT)

There has been little scientific evidence to suggest that abstinence-only-until-marriage education programs are effective in preventing or reducing teenage pregnancy and sexually transmitted disease. There is also little scientific evidence to suggest that comprehensive sex education programs are as or more effective in preventing or reducing teenage pregnancy and sexually transmitted disease than their abstinence-only counterpart. The following study compares the teenage pregnancy and sexually transmitted disease rates among minors in Virginia that participate in abstinence-only programs with rates among minors participating in comprehensive sex education programs. I hypothesize that counties implementing comprehensive sex education programs in schools will typically have lower pregnancy and sexually transmitted disease rates among minors than counties implementing abstinence-only education programs. I test these hypotheses with data on the 16 Virginia counties and county equivalents which could be verified as having either comprehensive or abstinence-only sex education programs in public schools during 1998-2003. The data confirm the hypotheses. On average, comprehensive program counties showed greater declines in pregnancy rates

among females aged 15-17 than abstinence-only program counties. Comprehensive counties experienced declines in Chlamydia and Gonorrhea rates among males and females aged 15-17, whereas abstinence-only counties' Gonorrhea and Chlamydia rates increased. These findings underscore the need for statewide – indeed, nationwide – public reporting of school systems' sex education program types to permit a more thorough comparison and evaluation of program outcomes. In the meantime, these results challenge Virginia advocates of abstinence-only education programs to empirically defend their claims.

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Chapter 1

Statement of the Problem

In the 2005 State of the Union Address, President George W. Bush announced that in order to sustain economic prosperity his budget would reduce or eliminate government programs that are not providing results. However, the fiscal year 2006 budget proposal included \$206 million to be allocated for abstinence-only-until-marriage education programs, a \$39 million increase over fiscal year 2005 spending on such programs (Alan Guttmacher Institute 2005). Currently, there is little scientific evidence to suggest that abstinence-only-until-marriage education programs are effective in preventing or reducing teenage pregnancy and sexually transmitted disease (STD). In order to support a funding proposal of this size, scientific research must be conducted to evaluate the effectiveness of such programs based on actual behaviors or health outcomes, such as sexual activity, pregnancy, or STDs.

The purpose of this study is to examine whether implementing comprehensive sex education programs in Virginia schools will tend to lower pregnancy and STD rates among minors more effectively than by implementing abstinence-only education programs. The proposed research will make comparisons based on pregnancy and STD infection rate data derived from the Virginia Department of Health. The type of sex education program instituted in each county will be obtained from informants within the Virginia Department of Health, county school boards, and organizations dedicated to sexual education and pregnancy and STD prevention. A statistical analysis will be conducted to determine if there is a difference in the pregnancy and STD rates of Virginia minors between the two groups of counties and to identify the type of sex education

program that can more effectively lower pregnancy and STD rates among minors in Virginia.

I anticipate that counties implementing comprehensive sex education programs in Virginia schools will typically have lower pregnancy and STD rates among minors than counties implementing abstinence-only education programs.

Chapter 2

Literature Review

Teenage Pregnancy: An Epidemic?

Teenage pregnancy has become recognized as a cause for public concern with many even calling it an epidemic. By 1980 teenage pregnancy and births to teenage mothers were viewed by most as a national threat even though the teenage birth rate actually declined throughout the 1970's and 1980's. However, the teen pregnancy rate (which includes live births, abortions, and miscarriages) continued to rise during this time period. Thus, teenage pregnancy is the real problem not the teenage birthrate.

Teenage pregnancy has often been considered a problem for three reasons. First, it is commonly considered to be a problem to have children raising children; however, as already noted, the teenage birth rate has been declining. A second reason is that teen mothers are often unmarried and single motherhood is associated with problems in children. However, "although teenagers give birth to only 12 percent of all babies, they represent about a third of all unmarried mothers" (Luker 1996:1). Thus, although this is a cause for concern, the majority of unmarried mothers are not teenagers. The third reason is that teenage pregnancy is considered to be a major contributor to the abortion rate in the U.S., but this perception is incorrect, since in 1996, teenagers only represented roughly one-third of abortions obtained in the United States. Therefore, it does not make sense for teenagers and teenage pregnancy to be the focus of so much public concern. These facts indicate to many scholars of teenage sexuality (Luker 1996; Nathanson 1991; Pearce 1993; Phoenix 1993) that the true motivation behind this public concern is to

control teenage sexuality. “Pregnancy makes sex visible; it converts private behavior into public behavior” (Nathanson 1991:4). While pregnancy itself can be prevented through the use of contraception and eliminated through abortion, the social stigma of sexual activity outside of marriage cannot be eliminated, especially when it is revealed in adolescent pregnancy (Nathanson 1991).

Only evidence supporting the construction of teenage pregnancy as a primary social problem has been visible to the public, while alternative explanations of the problem were only briefly covered or not mentioned at all. For instance, it is generally not mentioned that a large proportion of unmarried mothers were not teenagers and the majority of mothers that were teenagers were eighteen and nineteen years of age (Luker 1996). Pearce (1993) also notes that in our own history and through much of the world today, “children having children” are the norm, and the label of “children” has been constructed to emphasize the negativity involved in adolescent sexuality. If teenage pregnancy was indeed the important factor then more emphasis would be concentrated on contraceptive measures to avoid pregnancy rather than to avoid the stigma attached to children having sex and children. Thus, the teenage pregnancy epidemic was created by incomplete data, a negative public view of teenage pregnancy and sexuality, and the exclusion of information that would support alternative views of teenage pregnancy.

The Causes of Teenage Pregnancy

Several studies and reviews have been conducted over the years (Moore et al. 1995; Brindis 1993) to pinpoint the causes of teenage pregnancy focusing on the key questions of who becomes pregnant and what factors contribute to pregnancy. Among

them, disadvantaged youth still in their teen years are most likely to become pregnant and bear children outside of marriage. These youth are usually themselves products of economically disadvantaged families and social environments as indicated by living in poverty or on public assistance, having low academic aspirations and performance, and having behavior problems. In other words, teens predisposed to economic disadvantages are at greater risk of teenage pregnancy than advantaged teens. Research also indicates that the strains of teenage pregnancy and childbearing are felt more greatly among disadvantaged teens (Moore et al. 1995).

Sex education has long been assumed by researchers (Ruddick 1993; Kirby 2002; Moore et al. 1995), experts and advocacy groups dedicated to sexuality and reproductive health (e.g. Sexuality Information and Education Council of the United States (SIECUS), Planned Parenthood Federation of America, National Campaign to Prevent Teen Pregnancy, and Henry J. Kaiser Family Foundation), and government agencies (e.g. U.S. Department of Health and Human Services) as the core remedy to combat teenage pregnancy. The theoretical link between sex education and teenage pregnancy prevention has been acknowledged and has continuously been visible throughout public policy initiatives aimed at reducing teenage pregnancy, thus reinforcing the assumption that a lack of sex education is a primary cause of teenage pregnancy. With this said, it should be noted that scientific research has only been conducted on specific realms of sex education (e.g. abstinence-only, abstinence-plus, comprehensive programs, etc.) and has yet to conclusively determine whether sex education in general has an effect on teenage decision-making processes, ultimately leading to influence sexual activity and teenage pregnancy (Moore 1982; Moore et al. 1995). Furthermore, there is little scientific

evidence to suggest that abstinence-only education is effective in preventing teenage pregnancy, indicating that not all forms of sex education have an effect on teenage pregnancy. Consequently, the link between sex education and teenage pregnancy cannot be supported in its entirety, only suggested through examinations of isolated areas of sex education.

What's the problem?

Over the past three decades, groups have organized throughout the nation to respond to the common goal of reducing teenage pregnancy. They have organized at the local, state, and national levels, and they have failed, as the teenage pregnancy rate of the United States is still among the highest of industrialized nations. Based on birth data in 1999, “in the United States the [teenage] pregnancy rate is more than nine times higher than that of the Netherlands, nearly four times that of France, and nearly five times higher than that of Germany” (Feijoo 2001:1).

Schools and communities have generally followed two models for teenage pregnancy prevention, which are often guided by ideological concerns. For some, providing adolescents with comprehensive sexuality and reproductive health education is a must. For others, providing teenagers with abstinence-only education is the only safe and moral way that teenagers can address their sexuality. “A common oppositional ideology to the [comprehensive sex education] programs is that educating adolescents about contraceptives and making contraceptives available will increase the likelihood that teenagers will participate in sexual intercourse and get pregnant” (Franklin et al. 1997:560). Others feel that teaching both ends of the spectrum will send adolescents

mixed messages on what sexual behaviors are appropriate and expected, and may even discredit the very program designed to help them. Currently, there is little evidence to clearly support either program in its entirety. This study will attempt to partly fill that gap in our knowledge.

Policy Recommendations at a Glance

The relevance of the proposed study is supported by researchers noting that further research on public policies for family planning and sex education is needed that, “not only explores whether they have direct and intended effects but indirect and unintended effects” (Moore et al.1995:xviii). Scholars on teen pregnancy prevention indicate that the current federal policies are misguided. For instance, Geronimus (1997) concludes that federal efforts to reduce teenage pregnancy among the poor have at best been ineffective, and at worst detracted from more effective antipoverty strategies. Geronimus (1997:429) suggests that misconceptions surrounding teenage pregnancy are the driving force behind abstinence-only education efforts, which have effectively, “undercut support for the social safety net and other antipoverty programs.”

Pearce (1993) suggests policymakers drop the perspective of “children having children” and instead grant adolescents adult status to make sexual and reproductive choices thereby empowering them with the knowledge, ability, and responsibility to control their own reproductive destiny. Both Pearce (1993) and Rhode (1993) promote education and the access and availability of reproductive choice for adolescents. They encourage policies that acknowledge, respect, and support adolescents’ reproductive and sexual choices to the fullest extent. Finally, family and welfare policy would be applied

with respect to adolescent choice thereby supporting teen parents to become responsible, self-sufficient, and contributing members of society.

What is Abstinence-Only- Until-Marriage Education?

There are many abstinence-only-until-marriage education programs throughout the country, however in order for programs to receive federal funds they must follow the A-H Definition: Section 510(b) of Title V of the Social Security Act, P.L. 104-193 and may not endorse or promote contraceptive use. Mathematica Policy Research, Inc.'s, *Evaluation of Abstinence Education Programs Funded Under Title V, Section 510: Interim Report*, Devaney et al. (2002) identified common curriculum topics of the abstinence-only programs participating in the impact evaluation: self-esteem, developing values/character traits, formulating goals, making decisions, avoiding risky behavior, maximizing communication, strengthening relationships, understanding development and anatomy, preventing STDs, addressing consequences/self-control, learning etiquette and manners, aspiring to marriage, and understanding parenthood.

What is Comprehensive Sex Education?

Currently, no federal funding is allocated to states to promote comprehensive sexuality education in schools; however, there are many comprehensive sex education programs implemented that are not supported by federal funding. Of these programs, most comprehensive sex education curricula follow the framework for comprehensive sexuality education set forth by the National Guidelines Task Force of the Sexuality Information and Education Council of the United States (SIECUS). The National

Guidelines Task Force is an assembly of 20 professionals in areas relevant to human sexuality, medicine, and education that have developed guidelines to be used as a framework for comprehensive sexuality education. SIECUS, National Guidelines Task Force (2004) introduce six key concepts that represent the most general knowledge about human sexuality and family living, consisting of human development, relationships, personal skills, sexual behavior, sexual health, and society and culture. These key concepts are administered using 4 age- appropriate levels of learning.

Organizations that use the *Guidelines*, SIECUS, National Guidelines Task Force (2004) include the following:

- Advocates for Youth
- American Association of Sex Educators, Counselors and Therapists
- The Association of Reproductive Health Professionals
- Coalition on Sexuality and Disability
- Girls Incorporated
- Midwest School of Social Work Council
- National Asian Women's Health Organization
- National Coalition of Advocates for Students
- National Council of the Churches of Christ
- National Education Association
- National Lesbian and Gay Health Foundation
- National Network for Youth (formerly National Network of Youth Services)
- Planned Parenthood Federation of America
- Sexuality Information and Education Council of the United States
- Society for Behavioral Pediatrics

History of Abstinence-Only Policies

The Adolescent Family Life Act (AFLA) was created in 1981 in response to the nation's overwhelming rate of teenage pregnancy. The program, designed to prevent

teenage pregnancy, allocates federal funds to states for abstinence-only education programs. This initiative is still federally funded today (SIECUS 2004).

The next major federal effort of Title V Abstinence-Only-Until-Marriage funding was initiated in 1996 as a provision to the Temporary Assistance to Needy Families Act (TANF), also known as the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) or welfare reform. The funding became available to states in 1998 and is administered by the Maternal and Child Health Bureau, of the Human Resources and Services Administration, of the US Department of Health and Human Services. The program, Section 510(b) of Title V of the Social Security Act, allocates federal funds to states that adopt abstinence-only-until-marriage programs. Even as the current law has not yet released a definition of the term sexual activity, programs must follow the eight-point definition of abstinence education, as outlined by the U.S. Department of Health and Human Services, Health Resources and Services Administration (2005), in order to receive funds. States must then match three state dollars for every four federal dollars received. The Title V program, under the Temporary Assistance to Needy Families Act (TANF), has not been officially reauthorized, yet abstinence-only-until-marriage funding has continued and has a budget for the fiscal year of 2006 (SIECUS 2004). The A-H Definition: Section 510(b) of Title V of the Social Security Act, P.L. 104-193 as outlined by the U.S. Department of Health and Human Services, Health Resources and Services Administration (2005) states:

The term “abstinence education” means an educational or motivational program which:

(A) has as its exclusive purpose teaching the social, psychological, and health gains to be realized by abstaining from sexual activity;

(B) teaches abstinence from sexual activity outside marriage as the expected standard for all school-age children;

(C) teaches that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems;
(D) teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of sexual activity;
(E) teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;
(F) teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents, and society;
(G) teaches young people how to reject sexual advances and how alcohol and drug use increase vulnerability to sexual advances, and
(H) teaches the importance of attaining self-sufficiency before engaging in sexual activity.

Special Projects of Regional and National Significance-Community Based

Abstinence Education (SPRANS-CBAE) program, developed in 2001, allocates federal funds to be distributed directly from the Department of Health and Human Services to individual public and private organizations that administer abstinence-only-until-marriage programs, bypassing state level jurisdiction. Such organizations must adhere to the abstinence-only-until-marriage guidelines as stated in the A-H Definition: Section 510(b) of Title V of the Social Security Act, P.L. 104-193. This initiative is still federally funded today. Currently, abstinence-only education programs are the only sex education programs that are federally funded (SIECUS 2004).

Virginia's State Policy on Sexuality Education

As outlined by SIECUS (2004) the Virginia Sexuality Education Law is:

The Virginia Administrative Code states that all curriculum decisions are left to local school boards. Virginia gives permission for local school boards to develop sexuality education programs with the "goals of reducing the incidence of pregnancy and sexually transmitted diseases and substance abuse among teenagers."

Virginia code requires each local school board to establish a school health advisory council of no more than 20 members. This council must have "broad-

based community representation including, but not limited to, parents, students, health professionals, educators, and others." This council shall decide health policies, including sexuality education, for the school district.

The law states that parents or guardians can remove their students from any class. This is referred to as an "opt-out" policy. In Virginia, "parents should be required to justify their requests."

See Virginia Administrative Code 8VAC20-131-170, Virginia Administrative Code 8VAC20-170-10, and Code of Virginia 22.1-275.1.

Federal and State Funding: Where's the Money?

SIECUS (2004) states that the state of Virginia received \$1,210,360 in federal funding for abstinence-only-until-marriage programs in FY 2004. A complete breakdown of 2004 federal and state funding for abstinence-only-until-marriage programs in Virginia can be found on the Sexuality Information and Education Council of the United States (SIECUS) website at <http://www.siecus.org/policy/states/2004/mandates/VA.html>.

Mathematica Policy Research, Inc Study

When federal funding for abstinence-only education became available, a federally funded, four-year study by Mathematica Policy Research, Inc. was initiated by Congress to evaluate the effectiveness of such programs. Specific reports target questions of interest by Congress and the U.S. Department of Health and Human Services.

Unfortunately, only components of the study are publicized and easily accessible to the public on the U.S. Department of Health and Human Services website:

<http://aspe.hhs.gov/hsp/abstinence02/execsum.htm>. The complete study including the findings have not been accessible through their website, however, preliminary findings were eventually e-mailed to me in response to my phone request (U.S. Department of

Heath and Human Services, Office of the Assistant Secretary for Planning and Evaluation 2005).

As of summer 2005, Mathematica Policy Research Inc. has released two evaluations on the effectiveness of abstinence education programs. The first evaluation entitled, *The Evaluation of Abstinence Education Programs Under Title V Section 510: Interim Report*, Devaney et al. (2002) examined the underlying theories of abstinence education, the implementation and operational experiences of community and school recipients of the funding, the impacts of the programs on the attitudes and intentions of youth to remain abstinent, and their sexual activity and risk of pregnancy and sexually transmitted disease. After visiting numerous programs, the researchers selected 11 programs for an in-depth analysis, five of which targeted specific populations of youth, and six community programs used to promote community awareness and outreach concerning teen sexual activity. For the implementation and process analysis, the evaluators consulted program documents and focus groups of program participants, their parents, and school and community program educators in order to obtain an understanding of the programs implemented in each of the selected program locations. The implementation analysis of the five targeted groups relied on longitudinal survey data of youth in a group of program participants and of a control group. As the follow-up data for the impact analysis was not yet available at the completion of this report, the first evaluation simply laid a foundation for understanding the abstinence-only education initiative and explained its plan for success, while the second evaluation examined the effectiveness of the programs.

The second evaluation entitled, *First-Year Impacts of Four Title V, Section 510 Abstinence Education Programs*, Maynard et al. (2005) evaluated the first-year impact findings of four early recipient programs that received federal funding for abstinence-only education: *My Choice, My Future!* of Powhatan, VA, *ReCapturing the Vision* of Miami, FL, *Teens in Control* of Clarksdale, MS, and *Families United to Prevent Teenage Pregnancy* of Milwaukee, WI.¹ The study sample consists of youth that were randomly selected and assigned to one of two groups – those exposed to an abstinence-only education program and those who were not. The evaluation was designed to estimate the effects of federally funded abstinence-only education programs on behavioral outcomes, which included sexual activity and the risks associated with pregnancy and STDs. However, it appears inappropriate to classify the risks of pregnancy and contracting STDs as behavioral outcomes. Researchers also made a case for examining “the impacts of interventions on immediate outcomes that may be related to teen sexual activity, such as views of youth on abstinence and teen sex and their expectations to abstain” (Maynard et al. 2005:xix).

The first-wave report examined the first-year impacts of intermediate outcomes including views on “abstinence, teen sex and marriage, peer influences and relations, self-concept, refusal skills, communication with parents, perceived consequences of teen and non-marital sex, and the expectations to abstain from sexual intercourse,” and did “not examine behavior outcomes due to the short duration of the follow-up period and the young ages of the program participants” (Maynard et al. 2005:xx). Impacts of the

¹ The programs were selected for evaluation as they were school-based, prevention-focused programs that followed published curricula consistent with the requirements of the “A-H definition” of abstinence education and were noted by the evaluators to be operationally stable, replicable, and capable of supporting a rigorous, experimental design impact evaluation.

programs on teen sexual activity and other risk-taking behaviors and the relationship between intermediate outcomes and sexual activity were examined in a future report, consisting of two additional waves of data through 2005.

The examination thus far (Maynard et al. 2005), concluded that the programs evaluated had significant impacts on some, but not all, intermediate outcomes, which may be related to teen sexual activity and other risk-taking behaviors. The first-wave study reported some areas of success in changing participants' views to be more supportive of abstinence and less supportive of teen sex, increased perceptions of the potential consequences of teen sex and non-marital sex, and included some evidence of increased expectations to abstain from sex and reduce dating. However, the study did not meet goals in areas of peer influences and relationships, self-concept, refusal skills, and communication with parents. In addition, the control group reported similarly to that of the affected group in all remaining areas including views on marriage, self concept, refusal skills, communication with parents, perceptions of peer pressure on sexual activity, and perceptions of friends' views on abstinence.

The report goes on to list instances of the successful impacts of the programs, but only as they relate to participants' attitudes and perceptions of participates, not actual behaviors, such as sexual activities or the presence or treatment of sexually transmitted diseases and pregnancy. Also, a significant portion of the control group for the first-year impacts reported similarly to that of the affected group, such as their plans to abstain from sexual activity. While this was noted in the discussion of the evaluation, their age was also noted as the probable factor influencing their responses (Maynard et al. 2005).²

² Additional limitations of the study included several factors important for interpretation and warned against generalizing the findings of the study as the study is preliminary in nature and should not be

An interesting note to add to the interpretations of these results is presented in *The War on Choice*, Feldt (2004), which states that in 2001, the Bush administration revised the performance measures for evaluating abstinence-only education programs. In 2000, programs were required to provide information of participants' behavior changes to evaluate success, but in 2001, completion of the program and a commitment to abstain from sexual activity were considered program successes. The revisions essentially measure attitudes and program completion as successes rather than actual behaviors or health outcomes, such as sexual activity, pregnancy, or sexually transmitted diseases, which were required of recipients in 2000 (Feldt 2004:56). This claim that program success is determined by attitudes and perceptions rather than behavior was also presented by Rep. Henry A. Waxman of the Committee on Government Reform of the United States House of Representatives (United States House of Representatives, Government Reform Minority Office 2004).

Research on Sex Education: Is Abstinence Enough?

Abstinence-only education programs leave many worried that adolescents will not be exposed to necessary information regarding their reproductive and sexual health and will not know how to obtain reproductive health services if they become sexually active. The "abstinence plus" approach was proposed to address this concern. This approach combines abstinence education as the primary focus of the program and provides

compared to other programs with different structures. The primary limitation noted was the young age group of the program's participants and sample. The four programs evaluated served upper elementary and middle school aged grade levels, where sexual activity and even contemplation of sexual activity is minimal. While effects on this population may not be available for several years after the implementation and completion of the particular educational program, the study notes the importance of first-year impacts to the interpretation of the complete evaluation. Group participation was also a limitation, as not all youth in the program groups participated. Two groups were noted to have high rates of non-participation, but the statistical significance of the impacts remained unchanged (Maynard et al. 2005).

information on contraception and disease prevention for students who are already sexually active. Opponents of abstinence-plus or comprehensive education fear that by including additional components of sex education, along with abstinence, programs may actually encourage sexual activity among adolescents. However, the Henry J. Kaiser Family Foundation (2002:1) states that, “according to national surveys, most Americans support a more comprehensive approach to sex education: 81 percent say schools should both teach abstinence and give teens enough information to help them prevent unplanned pregnancies and the spread of STDs if they do decide to have sex; 18 percent support teaching only abstinence until marriage.”

Currently, there is little scientific evidence to suggest that abstinence-only education programs are effective in preventing teenage pregnancy. It is difficult to accurately determine the influence of abstinence-only education programs upon teenage pregnancy because few studies meet the criteria to be classified as scientifically valid by using empirical research and providing enough evidence to support a claim for either program in its entirety. However, the most reliable evidence thus far has yielded support for comprehensive or multi-approach sex education programs over abstinence-only programs. The National Campaign to Prevent Teen Pregnancy is a non-profit, nonpartisan organization dedicated to reducing teenage pregnancy. A study by Kirby (2002), in cooperation with The National Campaign to Prevent Teen Pregnancy and the Effective Programs and Research (EPR) Task Force, evaluated ten studies of abstinence-only education programs in response to a previous Heritage Foundation study in 2002, which claimed the studies provided evidence of abstinence-only program success in reducing early sexual activity. As it is difficult to claim program success without a

generally accepted set of criteria by which to acknowledge the study as scientifically valid across multiple researchers, Kirby and the EPR Task Force evaluated the Heritage Foundation's findings based on criteria previously established in a review of similar studies, *Emerging Answers*, Kirby (2001).

In order to provide evidence of scientific validity and be included in Kirby (2001), a study must have met the following established criteria. First, the study must have followed an appropriate and valid experimental or quasi-experimental design, including intervention and comparison groups and baseline and follow-up data for a study of grouped youth within a school setting. For a school or community-wide study, only appropriate additional or alternative measures, such as time-series data and multiple intervention locations with matched comparisons, were considered in this review. Studies based on national surveys were not considered for review, as they relied on the respondents' recall of participation and action and may have had poor measures of quality, due to difficulty in statistically controlling for additional factors. Post intervention data must have been collected for a minimum number of months after the intervention, which varied based on design and behavioral outcomes. For instance, if measuring the impact on the initiation of sex, follow-up data must have been collected at least six months after the intervention. Likewise, if measuring the impact on the frequency of sex or the use of contraception, impacts must have been measured for at least 2 months after the intervention or 4 months after the baseline. Studies included in Kirby (2001) must have also had a sample size of at least 100 and have measured actual behavior outcomes, rather than attitudes or intentions. Finally, a study must have utilized proper statistical analysis (Kirby 2002).

Based on the criteria established in Kirby (2001), Kirby (2002) concluded that nine of the ten abstinence-only based programs said to have been effective in delaying the initiation of sex and reducing the frequency of sex by the Heritage Foundation, failed to provide sufficient evidence to support their claims.³ Kirby (2002:6) concluded that while the results of the selected studies were “somewhat encouraging,” it should be noted that the studies “are not representative of all studies of abstinence-only programs.” The studies were carefully selected from a wide variety of programs that provided less encouraging or negative results. Their overall conclusion was similar to their conclusions

³ The following studies were either excluded from the evaluation and found to be scientifically invalid or deemed scientifically valid by Kirby (2002) for the following reasons: (1) While some evidence supported the association of abstinence pledging with later initiation of sex, the *Virginity Pledge Programs* study (Resnick et al. 1997, as cited in Kirby 2002), utilized a sample of the National Longitudinal Study of Adolescent Health instead of a quasi-experimental design and did not provide equivalent comparison groups to detect pre-existing values of adolescents, thus was not included for evaluation. (2) *Not Me Not Now* (Doniger et al. 2001, as cited in Kirby 2002) was a mass communications campaign to promote abstinence within the community, met the criteria of Kirby (2001) without comparison groups by following a multiple-times-series design. In addition, the study provided some evidence of delayed initiation of sex and a decline in pregnancy, however, did not meet the additional criteria of providing strong scientific evidence. (3) *Operation Keepsake* (Borawski et al. 2001, as cited in Kirby 2002) did not meet the criteria, as it failed to measure impacts for 6 months after intervention, and while the measurements at 14 weeks were positive, they were not statically significant, as they failed to control for subject variables (age, gender, and ethnicity) within the treatment and control groups. (4) *Abstinence by Choice* (Weed 2001, as cited in Kirby 2002) had a weak research design and did not provide pre-test and post-test data or an equivalent comparison group, thus it did not meet the criteria. (5) *Virginity Pledge Movement* (Bearnmen and Bruckner 2001, as cited in Kirby 2002) did not meet the criteria, as it lacked a quasi-experimental design and used data from a national survey under the same conditions of the Resnick et al. 1997, as cited in Kirby 2002 study. While it provided some evidence that pledging delayed the initiation of sex under selected circumstances, youth that pledged and did initiate sex, were less likely to use contraception. (6) *Teen Aid, Sex Respect, and Values and Choices* (Weed et al. 1992, as cited in Kirby 2002) met the criteria, however, even as programs delayed the initiation of sex, they did so at varying significance levels among selected groups of participants, thus only significantly delaying the initiation of sex in one of six groups of participants. (7) *Family Accountability Communicating Teen Sexuality (FACTS)* (Weed updated, as cited in Kirby 2002) did not meet the criteria, as it failed to provide adequate evaluation design, with equivalent pre-test and post-test time conditions for participant and comparison groups. (8) *Postponing Sexual Involvement (PSI)* (Howard and McCabe 1990, as cited in Kirby 2002) met the criteria and was included in Kirby (2001), but included a supplemental contraception education component, which classified the program as abstinence-plus, rather than abstinence-only. In addition, the program was rigorously evaluated as an abstinence-only program, without the contraception education component, which concluded that it did not delay the initiation of sex. (9) *Project Take Charge* (Jorgenson, Potts, and Camp 1993, as cited in Kirby 2002) did not meet the criteria, for its small sample size, and impacts were not found statically significant, as the significance test failed to adjust for differences among size of participant and control groups. (10) *Teen Aid Family Life Education Project* (Weed, Prigmore, and Tanas 1992, as cited in Kirby 2002) was excluded from evaluation, as the evaluators discovered it to be the identical study of previously evaluated, *Teen Aid, Sex Respect, and Values and Choices* (Weed et al. 1992, as cited in Kirby 2002).

in Kirby (2001), “there do not currently exist any abstinence-only programs with strong evidence that they either delay sex or reduce teen pregnancy.”

Researchers, Christopher and Roosa (1990; Roosa and Christopher 1990), provide two evaluations, ultimately opposing the implementation and continued use of the abstinence-only primary prevention programs.⁴ Christopher and Roosa (1990) first evaluated the impacts of the federally funded abstinence-only education program, Success Express, on low income, primarily minority, middle school aged adolescents and reported characteristics of program dropouts to identify students at greater risk. The Success Express program, of eight participating school locations, implemented a quasi-experimental pretest-posttest control group design to include control participants of the same locations, but was not able to implement random assignment. The program consisted of six instructional sessions, which encompassed self-esteem, family values, communication skills, peer pressure, and the value of sex to be confined to marriage.

Christopher and Roosa (1990:70) tested the equivalence of the program’s participant and control groups and found that participants were a half of a grade more advanced and started dating at a slight earlier age than controls.⁵ The evaluators suggested that the possibility of the differences having affected the sexuality outcome measures of the study, however, acknowledged that the differences could have been result of usual age maturation. The evaluators then performed additional analyses indicating that participants and controls had significantly different posttest scores

⁴ Both evaluations were funded in part by the Office of Adolescent Parenting Programs (OAPP), the agency that administers the Adolescent Family Life Act (AFLA) federally sponsored programs.

⁵ This study used multiple one-way ANOVAs on the pretest data of participants that completed both the pretest and posttest.

regarding lifetime sexual behavior.⁶ An additional analysis of means indicated that participants increased their mean sexual interaction level over time, while controls did not, which was further supported when non-virgins were removed from the analysis and resulted in the same effect.

An evaluation of frequencies determined that increases in several sexual behaviors occurred for both male and female participants, male participants reporting a larger increase, although no change was visible in males engaging in sexual intercourse. The reported increase in sexual activity led evaluators to conclude that the effect was either an outcome of participation in the program or that participation interacted with a third unidentified variable to produce the same effect. These results, the lack of positive program outcomes, the reported lack of success of similar programs examined, and the reported success of multiple approach intervention programs examined, all led the evaluators to question the success of programs that rely solely on premarital sexual abstinence for intervention and suggested that the single approach is ineffective. However, it should also be noted that when opposing the single approach position, the evaluators stated that multiple influences may impact adolescent sexual behavior, which appears to conflict with their conclusion that the increase in sexual activity among participants was a direct result of program participation (Christopher and Roosa 1990).

In the final analysis of their evaluation, Christopher and Roosa (1990) report that 41% of participants and 30% of controls completed the program pretest but failed to complete the posttest, indicating significantly more participants dropping out than controls. A chi-square analysis revealed the equal likelihood of females or males

⁶ These additional analyses compared the pretest and posttest scores of both groups using a series of 2X2X2 (Participant/Control Group X Gender X Time) repeated measures analysis of covariance tests, which revealed only one Group by Time significant interaction among variables.

dropping out of the program. A 2X2 (Dropout Status X Treatment/Control Group) analysis of program variables followed, which revealed three significant interactions of dropout participants. Dropout participants expected to have sex at a significantly younger age than those retained in the program or of controls who failed to complete the posttest (approximately four years earlier than either group). Furthermore, when asked about best age to have sex, they responded with a significantly lower age than that of other groups (2 ½ years). In regards to the lifetime sexual involvement measure, they were significantly higher in their level of sexual experience than the other groups. Based on the evidence provided from the dropout analysis, the evaluators concluded that adolescents at the greatest risk failed to complete the program, were more likely to encounter the effects of teenage pregnancy and sexually transmitted disease than participants that completed the program, and suggested that intervention programs make a distinct effort to recruit and maintain high-risk participants.

Lastly, Christopher and Roosa (1990) concluded that in order to motivate participation and completion of these programs, especially among high-risk students, family life educators and those administering abstinence-only intervention programs must give priority to the interests of adolescents themselves. Next, they suggested that programs that promote abstinence as the only means in which to address adolescent sexuality and pregnancy may be insensitive to students already sexually active, especially those who have experienced involuntary intercourse, and should instead aim to include all students in a sensitive manner. Finally, the evaluators noted that the few scientifically sound studies of pregnancy prevention programs to show success were either comprehensive or multi-approach programs and this evidence, in addition to their

evaluation, did not provide adequate support for abstinence-only programs. Furthermore, they question social policy, which supports such programs as the only means of sex education and pregnancy prevention, when all scientific evidence thus far has clearly supported comprehensive programs as the most successful primary prevention program.

Christopher and Roosa (1990) attribute the lack of scientific literature containing abstinence-only program impact results to evaluation problems, such as poor research design, limited significant data, lack of adequate control groups, little relationship between measures and program goals, poor evaluation measures, and inappropriate data analysis methods. All of these problems, they claim are characteristics of AFLA federally sponsored programs. After expressing the need for additional scientific research, Christopher and Roosa evaluated again, this time providing a replication of their previous evaluation of Success Express. The replicated evaluation, Roosa and Christopher (1990), produced some differences among program effects, but continued to yield similar results and conclusions as the first evaluation. For instance, when testing the equivalence of the program's participant and control groups, controls were found to be slightly older and more advanced in grade level than participants, whereas the opposite was found in the previous evaluation. Controls also reported dating at a later age, but reported their expectations to have sex at an earlier age than participants. When comparing the pretest and posttest scores of both groups, the replicated evaluation identified no significant interactions among program variables and no significant interactions that would produce changes in premarital sexual attitudes or behaviors. Only one significant Group X Time interaction resulted, which found controls to increase the age at which they first expected to have sex by one and one-half years while the treatment

group increased by one-half year. The dropout rate was slightly lower than in the previous evaluation, yet the difference among groups and the likelihood of dropping out remained unchanged. These findings were further tested with the removal of non-virgins from the analysis, which provided the same results as the first evaluation.

Lastly, Roosa and Christopher (1990) arrive at similar conclusions as previous abstinence-only program evaluations. They first address the narrow scope of the abstinence-only approach by alleging that the program's promotion of abstinence over the goal of preventing adolescent pregnancy limits the scope of services that recipients of AFLA funding can provide as well as the student population they can serve. They report the inability of previous evaluations to support abstinence-only education programs and note that the few that have claimed success in reducing teenage pregnancy rates were actually multi-dimensional programs, including contraception education from additional funding sources as part of their intervention program. Among multiple suggestions for social policy, they recommend that programs give top priority to reducing adolescent pregnancy without restricting methods, especially ones proven to be effective. They also suggest that programs evaluate behaviors, such as sexual activity, as well as attitudes in order to ensure program success and make efforts to improve the quality of evaluations. Most importantly, Roosa and Christopher (1990:367) charge those in political authority over abstinence-only programs as "compromising the welfare of a significant portion of the next generation," and suggest significant changes be made in federal policy and funding surrounding adolescent pregnancy prevention before a reduction in adolescent pregnancy rates can occur, yet another position legitimizing the need for scientifically sound evaluations of teenage pregnancy rates as a measure of program success.

Smith Thiel and McBride (1992), present a counterclaim to both Christopher and Roosa (1990; Roosa and Christopher 1990) evaluations by challenging their evaluation methods and conclusions, although some of these claims are inaccurate.⁷ First, Smith Thiel and McBride charge the evaluators with making sweeping conclusions of all abstinence-based programs based on the evaluation of only one abstinence-based program. However, the Success Express program, evaluated by Christopher and Roosa was an abstinence-only education program and was not abstinence-based, which is known in the field to encompass more than abstinence alone. Secondly, Christopher and Roosa did not base their conclusions on the evaluation of Success Express alone since they specifically incorporated a solid foundation of literature to also base their opposition to abstinence-only programs on. Smith Thiel and McBride also recommend that evaluators, such as Christopher and Roosa, give abstinence-only programs a fair chance to work, in which I would have to agree. However, Success Express was evaluated in 1990, along with several other programs, some before 1990, and yet, without scientific evidence to support their effectiveness, abstinence-only programs are still the only federally funded sex education programs in 2005, over 15 years later.

Finally, Smith Thiel and McBride (1992) charge the Christopher and Roosa (1990; Roosa and Christopher 1990) evaluations to be inexpensive and methodologically weak, which should only be used for preliminary recommendations of a project and not as evidence to support or oppose abstinence-only programs in general. However, both

⁷ It is important to note that at the time of their report, Smith Thiel and McBride (1992) were the current and former Chief Evaluators for the Department of Health and Human Services' Office of Population Affairs (OPA), which funded Success Express under the AFLA Act, and partially funded both Christopher and Roosa (1990; Roosa and Christopher 1990) evaluations. This is not to discredit them as efficient evaluators, but to note the likelihood of a multi-agenda and researcher bias.

evaluations appear to follow a methodologically valid study appropriate to most researchers and would even qualify as such by the Effective Programs and Research (EPR) Task Force, of The National Campaign to Prevent Teen Pregnancy, following the criteria mentioned earlier.

Christopher (1995) reviewed studies published in scholarly peer reviewed journals, which reported an association between sex education and pregnancy related behaviors, as a basis for evaluating the four primary pregnancy interventions of school clinics, abstinence-only programs, multidimensional programs, and theory-based programs. Success was measured by the outcome variables of coital behavior, contraceptive practices, and pregnancy. Christopher also examined national probability surveys conducted since the mid 1970's in order to detect whether a relationship existed between sex education and pregnancy prevention.

The review of the national probability surveys found an inconsistent relationship between sex education and coital behavior, however, some relationships between sex education and primary interventions were visible. For instance, students who participated in multiple programs notably delayed coital activity compared to control groups. This was true of one multidimensional program (Zabin et al. 1986, as cited in Christopher 1995) and three of the four theory-based programs evaluated (Howard and McCabe 1990; Kirby et al. 1991; Eisen et al. 1990, as cited in Christopher 1995). The abstinence-only program (Christopher and Rossa 1990, as cited in Christopher 1995) was the only program noted to increase sexual activity among youth, however, the results proved insignificant when replicated. Results of the national surveys and of several studies (Eisen et al. 1990; Kirby et al. 1991; Howard and McCabe 1990, as cited in Christopher

1995) reported that youth who participated in sex education were more likely to use contraception than those who did not participate in sex education, however, these programs had no effect on contraception use for youth already sexually active prior to exposure to sex education. For these youth, only one intervention showed evidence promoting contraception use, which were school clinics with contraception services available to students (Kirby et al. 1991, as cited in Christopher 1995).

Finally, there was the reported success of two multidimensional programs (Vincent et al. 1987; Zabin et al. 1986, as cited in Christopher 1995) on the pregnancy rate of their targeted populations. Each of these programs had a reduction in pregnancy rates when compared to controls. However, only one of these evaluations used multi-year data (Vincent et al. 1987, as cited in Christopher 1995).

Sex education that includes contraception and HIV/AIDS prevention education has continued to be the leading recommendation by researchers to most effectively combat teenage pregnancy, but even as recommendations to policy makers have continued in this direction for some time, federal efforts have continued to fund programs solely in the arena of abstinence-only education. Rhodes (1993:322) states “widespread ignorance among teenagers concerning the substantial risks of unprotected sexual activity and the relatively low risks of contraceptive use demonstrates the need for fuller information.”

Kristin Moore, a researcher who has advised the government in the area of teenage pregnancy since the 1970’s, made policy recommendations for comprehensive sex education as far back as 1982. She, and fellow researcher, Moore and Burt (1982), recommended that sex education be administered through multiple channels and contain

discussions on contraception technology, its use, and comfortable ways in which to discuss contraception with sexual partners and family members. They recommended sex education be a meeting place for teens to explore values related to sexual activity and contraception with their peers. Correcting misconceptions about sex not only promotes knowledge, self-reliance, and autonomy, all attributes of a healthy character, but also helps adolescents postpone sexual activity and properly use contraception if they become sexually active.

Chapter 3

Theoretical Aspects

Public Policy to Construct Reproductive Freedom

Teenage pregnancy is a national concern that has received much publicity, especially in recent times, from the public, news media, and political leaders as public policy has been used as a social control to combat the problem. This chapter is dedicated to uncovering how teenage pregnancy has been constructed as a social problem and taken stage as a national threat. Based on a timeline presented by Kristin Luker (1996), which for the most part is still current today, we will examine pivotal applications of public policy as it relates to, influences, and shapes reproductive freedom in America. From an analysis of reproductive freedom, we can begin to understand how teenage pregnancy takes residence within reproductive freedom as a social problem.

In 1903 Theodore Roosevelt spoke the words “race suicide” to describe an on-going problem of the country’s fertility. The intellectually advantaged and social elite were not bearing children at a rate that would sustain their class, while families of foreign-born immigrants almost doubled in size compared to the native upper-class citizens. The government began creating and implementing public policy in the late 1800’s in an effort to administer population control for foreign-born occupants and increase the birthrate among the social elite. The Comstock Act of 1873 was the first government effort to address the problem, outlawing the mailing of materials or information concerning forms of contraception. Since the majority of contraceptive devices were foreign-made, the Comstock Act had a large-scale effect on the contraception needs of women in America and consequently introduced a larger demand

for abortion services. By 1900 abortion providers were few for nearly every state had federal and state laws banning contraception and abortion. So how then did “race suicide” still exist (Luker 1996)?

A federal case of 1930 known as *Young Rubbers* found that the Comstock Act could prohibit only illegal contraception, giving way to a new category of legal contraception. Due to federal and state laws that restricted funding to public hospitals and family planning service providers, contraception could now only be obtained by the wealthy or those who could afford private family practitioners, contradicting the original purpose the policies were created to achieve. Now the rich were advancing even farther socially and economically without the undue burden of childbearing, and the poor were getting poorer with multiple births per family. With this, the social problem of race suicide embarked on a time when government interference on reproductive freedom became visible in welfare policy (Luker 1996).

In 1935, a time when birth control was still viewed as an immoral means for the socially elite to dissolve their responsibility of bearing children, Franklin Roosevelt had no choice but to respond to the poverty crisis among the poor with a provision to the Social Security Act authorizing funds to be used for contraception programs. Although a minimal effort, for any public effort of this nature would surely put a politician at professional risk, it marked the beginning of an era that would change welfare construction in this country forever. Still by 1963 only 13 states had federally supported contraception programs. Government interference on the basis of combating race suicide began to disappear, but was quickly replaced with the same interference on the basis of anti-poverty efforts. Government efforts continued in this manner with the categorization

of welfare benefits to include single, poor, abandoned, or otherwise financially dependent mothers through Aid for Dependent Children (AFDC), the most active form of child welfare support until 1996 (Luker 1996).

As attitudes surrounding welfare policy and contraception have drastically changed over the years, state laws based on the Comstock Act were struck down as unconstitutional and federal efforts to extend family planning to less fortunate populations were seen as one of the largest public policy successes. Teenagers were the only population to be left out of the equation. To extend contraception services to teenagers when in every other legal aspect of their life they were regarded as children would be unheard of. If the logic that was used to include poor women, foreign-born women, and women of color were applied to extend benefits to teenagers, adolescent sexuality would be made public bringing moral and social repercussions to a country already viewed by many as morally bankrupt. For federal or state funded programs to include teenagers a case was made by advocacy groups that teenage pregnancy was in itself a major cause of poverty, but even as this theory became widely accepted, the continued controversy surrounding adolescent sexuality and the extension of family planning services to benefit teenagers proved to be a public policy flop (Luker 1996).

With the election of Ronald Reagan to the presidency, 1980 marked the “New Right's” ascendance to power. The New Right brought a time of sexual repression and set reproductive freedom for women of all ages under political fire, especially that of adolescents. The first stabs at reproductive freedom however occurred prior to Reagan’s administrative term. In 1976 the Hyde Amendment was passed to restrict Medicaid funds from being used for abortion services unless necessary to save the life of a woman. In

1978 a reauthorization of Title X funding limited minors under age 16 from obtaining contraceptives from federally funded programs without parental consent, only then to require in 1981 under the Omnibus Budget Reconciliation Act (also known as the squeal rule) that all clinics funded by Title X notify parents of minors under age 18 wishing to receive reproductive services. Then in 1978, the Adolescent Health, Services, and Pregnancy Prevention and Care Act, later known as the Adolescent Family Life Act, was created in an attempt to reduce teenage pregnancy. This act led to abstinence-only education, as we know it today (Luker 1996). The containment and stifling of self-determination and reproductive freedom has been apparent throughout the history and application of family policy initiatives, especially those aimed at controlling sexuality. In the coming sections this idea will further be examined as it relates directly with the underlying intentions of the Abstinence-Only-Until-Marriage policy.

Self-Determination and The Illusion of Freedom

In America, individuals are said to possess the right to self-determination, in that they have freedom to live, for the most part, how they choose. Self-determination is depicted by political leaders to be a born-given right, a right that is to be upheld in a nation where freedom and equality are national priority. However, throughout history, Americans have fallen victim to their governing bodies relinquishing their liberties in the name of God or in order to uphold specific values and beliefs that are consistent with the nation's ideals and traditions. Here of all places, where freedom is so proclaimed, one man's moral ideals and beliefs take precedence over another's time and time again.

Social public policy is an authority that acts to determine which liberties are appropriate, deemed legal, and ultimately protected, and which are not.

Liberties are instated and removed at the discretion of political leaders based on moral intent, and in this, individual freedom becomes politically oppressed. While policy initiatives like that of the Abstinence-Only-Until-Marriage policy appear to secure the ideals of diversity that define America as land of the free, these insincere and superficial attempts act instead to mold America into a morally appropriate structure. Support for these arguments are found throughout the literature on moral freedom, choice, and the politics of sexuality. It can be noted that the majority, if not all scholars of these matters, agree that a pluralistic democracy such as ours should embrace the idea that no one conception of the way one ought to live should possess the power to overcome others (Wolfe 2001:167).

The proposed research study is grounded in critical social science methodology. Though the study may appear to take on a positivist approach in regards to hypothesis testing and attempting to influence the future decisions of a population based on research findings, the study is ultimately critical in nature. Comprehensive sex education is commonly seen by its opponents as value-free, for it encompasses a variety of resources, including the message and benefits of abstinence. Comprehensive sex education aims to inform adolescents with the most medically accurate information available regarding their reproductive and sexual health, including information on sexuality, STDs, HIV/AIDS, and contraception. Even as comprehensive sex education encourages adolescents to obtain reproductive health services if they become sexually active, values are in no way absent from this model.

“In a pluralistic society, we must respect diverse sexual attitudes and behaviors, as long as they are based on ethics, responsibility, justice, equality, and non-violence. People have a variety of opinions and perspectives on sexuality because they come from different backgrounds and have different personal histories. However, most people agree that all sexual behaviors should reflect the principles of respect, fairness, equity, and mutual consent” (Planned Parenthood Federation of America, Education and Social Marketing Group 2005:1). Brindis (1993) is among multiple researchers that support this vision, calling for interventions that promote diverse value systems and cultural differences at the community, city, county, state, and national levels to target more effectively the changing dynamics of youth.

Critical in nature, comprehensive sex education programs seek to bring about knowledge to encourage adolescents to become responsible caretakers of their bodies and minds. Such programs are designed to empower adolescents to make fully informed and wise decisions as they exercise their right and liberty to self-govern, as defined in the American creed. Freedom or the liberty of self-determination is America’s primary principle, a value in itself; therefore, values cannot be completely removed from even the most liberal of policies. American public policy is to build upon the primary principle and foundation of freedom, and therefore, any social research that bases its foundation upon freedom is indeed promoting, “a moral-political activity that requires the researcher to commit to a value position” (Neuman 2003:86).

Individuals cannot provide services that promote self-awareness, self-determination, or the empowerment of people without doing so from a moral obligation to consider all people worthy of self-determination. So, the moral obligations of legal

authorities to promote principles of self-government and the self-determination of all people (freedom) must be developed on moral ground, or rather, on the moral basis of those in political office. So then, if the freedom to self-govern is to be based on the moral principles of those in political authority, then the people of America are not truly self-governing or free to live in accordance with their own ideas of morality at all, but rather free only to live by the ideals of American society as directed by government regulations. “Critical social science rejects positivist value freedom as a myth” (Neuman 2003:86).

In other words, if the government acts as a parent figure to say, a boy, which will represent the people of a nation, and asks the boy (people) to choose one of two activities for the day, then while the child believes that he has actually chosen the activity for the day, he overlooks the reality that the parent only provided him two choices, and so, he did not act on his own accord at all, but of his parent’s will (government). This example says that, “people do shape their destiny, but not under conditions of their own choosing” (Neuman 2003:84). Immanuel Kant, a great theorist of freedom, as it relates to Western tradition, agrees that autonomy is the greatest of all human values, however, individuals may only live autonomously within a context of ageless moral guidelines that are laid before them (Wolfe 2001). The understandings and ideals of moral freedom are categorized, and either advocated for or suppressed through social public policy. Permeating through Virginia at the state and local levels, the Abstinence-Only-Until-Marriage policy is a reflection of public policy as a means to sculpt American society on the basis of moral ideology rather than its overt objective of combating teenage pregnancy. Opponents of abstinence-only education have even made a case that abstinence-only education programs teach that it is acceptable to override the

Constitution for such programs and the policies used to promote them are in clear violation of the constitutional principles of separation of church and state and freedom of speech (Feldt 2004).

Abstinence-Only-Until Marriage: The Message Behind the Words

For the Abstinence-Only-Until-Marriage policy to sculpt American society it must entail categorization and labeling approaches. Categorization brings about the existence of rules, which are used to label individuals by either including them or excluding them as members of groups in society. This categorization separates the normal or the worthy, from the deviant or unworthy, and is visible within the Abstinence-Only-Until-Marriage policy itself (Nathanson 1991). Although not covered in the scholarly literature reviewed, an examination of the Abstinence-Only-Until-Marriage policy is necessary to reveal the exclusion of those deemed deviant through the definition. The A-H Definition: Section 510(b) of Title V of the Social Security Act, P.L. 104-193 as outlined by the U.S. Department of Health and Human Services, Health Resources and Services Administration (2005) states: *The term “abstinence education” as an educational or motivational program which:*

- (A) has as its exclusive purpose teaching the social, psychological, and health gains to be realized by abstaining from sexual activity;*
- (B) teaches abstinence from sexual activity outside marriage as the expected standard for all school-age children;*
- (C) teaches that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems;*
- (D) teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of sexual activity;*
- (E) teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;*

(F) teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents, and society;
(G) teaches young people how to reject sexual advances and how alcohol and drug use increase vulnerability to sexual advances, and
(H) teaches the importance of attaining self-sufficiency before engaging in sexual activity.

First, the wording, “until-marriage” in the policy needs to be revamped to include all students, regardless of sexual orientation. The current language, highlighted in sections D, E, and F of the policy, directly exclude homosexual, bi-sexual, and transgender students from its goals as described in the definition of “abstinence education.” This definition either assumes that all citizens, regardless of sexual orientation, are able to legally marry in the United States, which is currently not the case, or deliberately targets and excludes these student populations from the policy’s objective. As a result, students of alternative lifestyles are alienated and not protected under the current legal system. The terminology of the policy title and the definition of abstinence education as stated above appears to be offensive and potentially harmful to student populations that are excluded by the policy and the language used to describe it. Abstinence-only education for the majority is just not good enough. Sex education that encompasses all of America’s youth is a must.

Abstinence-Only: The Four Social Controls?

After examining the definition of abstinence-education to recognize potential harmful affects on excluded audiences, the next step is to identify the origin of the policy and the intentions the policy was created to promote. How does a restrictive policy, in terminology alone, claim to be the only effective means to educate America’s youth on

sexuality? Could abstinence-only education be nothing more than a political ploy for social control? Cohen (1985:1 as cited in Nathanson 1991:10) “defines social control as the organized ways in which society responds to behavior and people it regards as deviant, problematic, worrying, threatening, troublesome, or undesirable in some way or another.” Nathanson (1991:10) reiterates with the “examination of the processes in contemporary society by which power of this description is acquired and used, and of the shifting composition of the interested, or powerful, audiences, has been the province of three interrelated bodies of sociological theory: of deviance and social control, of social movements, and of the emergence and construction of public problems.” The following passages will address the idea of using public policy as a tool for social control and its relation or extension from former power struggles, such birth control, abortion movements, and societal problems, such as teenage pregnancy, sexually transmitted diseases, and adolescent sexuality.

Rep. Loretta Sanchez (D-California), as cited in Feldt (2004: 25) says, “the biggest problem is that people don’t know what is happening.....They don’t even realize this movement is not just about abortion, it’s about access to birth control and all reproductive health services. It’s about choice.” Just as the abortion movement has never been about abortion alone, abstinence-only education is not only about combating teenage pregnancy or sexually transmitted diseases. It too is about choice. Abstinence-only education is just as much about controlling socially unacceptable populations and behaviors as it is about preventing teenage pregnancy and sexually transmitted diseases among America’s youth. Support for this argument and its theoretical underpinnings are described in the work of Constance A. Nathanson. “If, as Foucault suggests, sexuality in

modern societies has become a principal instrument for the exercise of power over bodies and populations then the agencies that have this power and the means that they employ need to be specified. The power to construct categories of sexual orthodoxy and unorthodoxy and to deploy these categories for purposes of social control is a property of particular individuals and institutions” (Foucault as cited in Nathanson 1991:10). Other than the policy’s primary objective in line (A) “ *teaching the social, psychological, and health gains to be realized by abstaining from sexual activity,*” there are several instances throughout the body of the text that alludes to additional forms of intended behavioral manipulation or social control (U.S. Department of Health and Human Services, Health Resources and Services Administration 2005).

The first and most apparent example of intended behavioral manipulation is the process of defining a family and its impacts on non-traditional families. Line (B), (C), (D), and (E) all promote sexual activity only in the context of a mutually faithful, monogamous relationship, in the context of marriage, and warns students of the dangers and consequences of bearing children out-of-wedlock and the negative effects of sexual activity outside of marriage. The language, as described earlier, not only excludes a variety of student populations from its scope, but also identifies the traditional family based on one man and one woman as the only acceptable and expected family composition. This categorization of family sends negative messaging to students of families not included in the “expected” traditional family makeup as described in the policy. The language also confines sexuality and sexual activity only within the context of marriage, again sending harmful messaging to any person not able to legally marry or

persons wishing to remain unmarried (U.S. Department of Health and Human Services, Health Resources and Services Administration 2005).

The second example of the intended social control of the policy is seen in terms of welfare policy. Line (F) of the text “*teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child’s parents, and society*” (U.S.

Department of Health and Human Services, Health Resources and Services

Administration 2005). Here “*society*” is the key word, indicating that “*children*” born

out-of-wedlock are likely to also produce harmful consequences on society, again a

negative burden. Line (H) “*teaches the importance of attaining self-sufficiency before engaging in sexual activity,*” which identifies the expectation of those not financially

secure to avoid sexual activity, thus not bear children. In other words, now unmarried

individuals, as well as those who are not self-sufficient or financially able to support their

children without public assistance need not have sex or they may put an undue burden on

society. The definition of abstinence-only education, the A-H Definition: Section 510(b)

of Title V of the Social Security Act, P.L. 104-193 was initiated as a provision to the

Temporary Assistance to Needy Families Act (TANF), also known as the Personal

Responsibility and Work Opportunity Reconciliation Act (PRWORA) or welfare reform.

This alone is very telling of the policy’s true intentions concerning welfare reform.

The third and most intricate example of intended behavioral manipulation is

found in the social problem of adolescent sexuality, and from this stems the intended

social control of reproductive freedom. Adolescent females are a unique population in the

sense that they are legally bound to their parental guardians until 18 years of age, and as

children, are treated as parental property. The role of the government through public

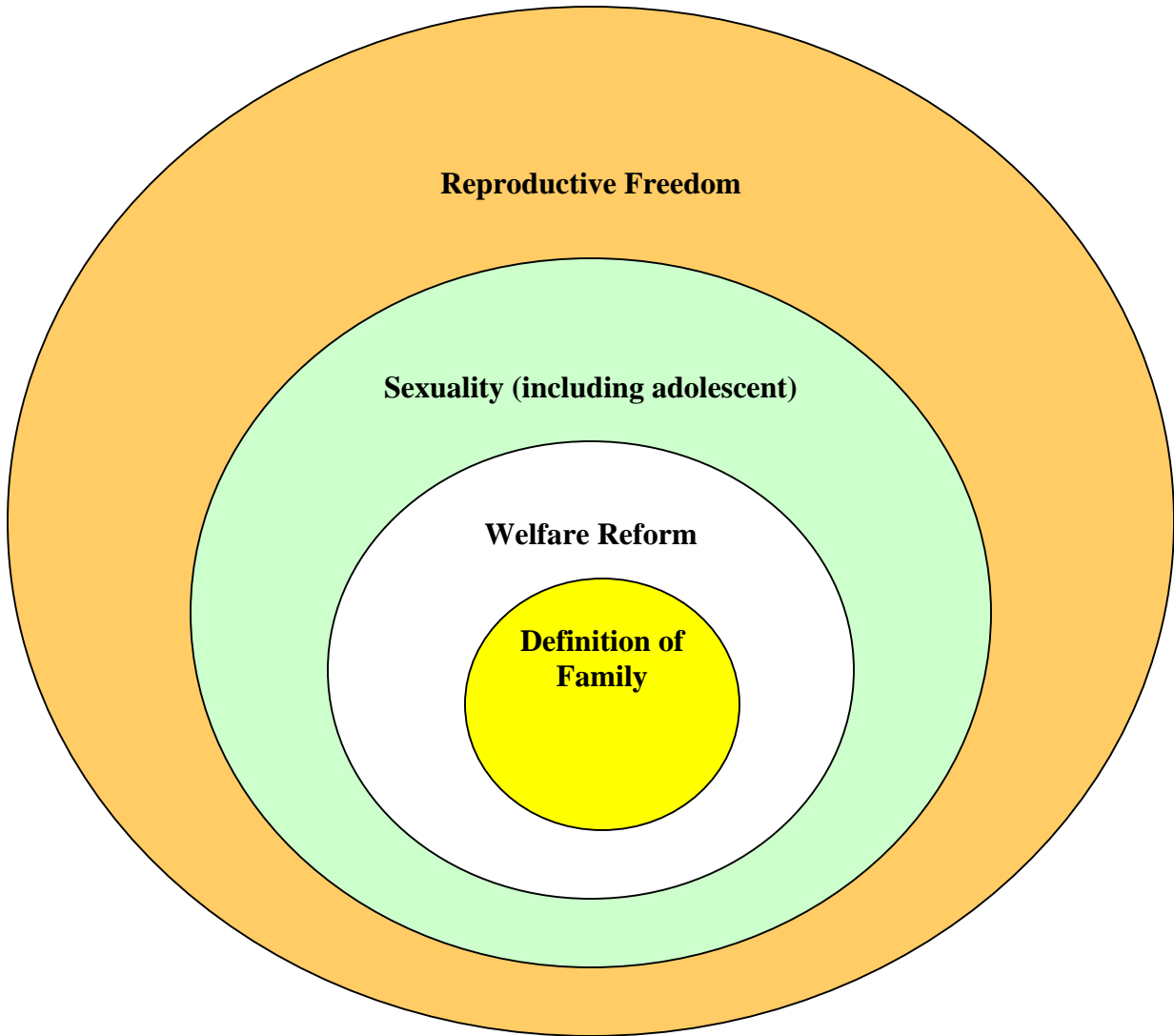
policy and law and the role of the church have set forth a legal marriage between man and women as the expected and approved life course for women, in this sense a woman is then bound to her husband in the same manner she is as a child to her parents. The age in between childhood and marriage is a time of sexual confinement (Nathanson 1991). Abstinence-only education encourages this ideal of sexual confinement or asexuality until marriage throughout its purpose, terminology, supportive literature, and curriculum.

The idea of sexuality, particularly adolescent sexuality outside of marriage, is the underlying and key issue of the abstinence-only-until-marriage initiative. The policy is not aimed at reducing or eliminating adolescent pregnancy and sexually transmitted diseases, but rather strategically placing boundaries on sexuality altogether through government interference made possible through public policy. If reducing or eliminating teenage pregnancy and sexually transmitted disease among school-aged children was indeed the primary objective for this type of government interference then comprehensive sex education would surely be at the forefront of the battle for its curriculum of promoting education on contraception, the most accurate and scientifically proven measure of prevention. While theoretically, abstinence may be the only guaranteed method to ensure pregnancy prevention, statistical evidence of teenage pregnancy and STD rates have shown abstinence to be an unrealistic expectation for America's youth, and therefore it should not be the sole teenage pregnancy prevention initiative. This being the case reveals the final sphere of intended social control targeting reproductive freedom.

Access to contraception and the right to abortion is reproductive freedom. Reproductive freedom gives women control of their reproductive destinies, thus allowing

them to govern every other aspect of their lives. The birth of reproductive freedom gave women equality in social, economic, and political settings. Without this freedom women will surely return back to a life economically dependent on and subordinate to men (Roberts 1998: 271). Critical to the platform of reproductive freedom is education, for if access to knowledge is denied, so is the full inclusion of reproductive freedom. In this sense, restriction and censorship of medically accurate information about sexuality is in direct violation of freedom. When and only when, reproductive freedom is revoked and access to contraception and abortion is denied, will abstinence-only education be the only logical means by which to prevent unintended pregnancy and sexually transmitted disease. The underlying social controls of the Abstinence-Only-Until-Marriage policy are expressed visually in Figure 1.

Figure 1: Section 510(b) of Title V of the Social Security Act:
Abstinence-Only-Until-Marriage Policy's Underlying Social Controls



Chapter 4

Methods

This study will compare mean changes in teen pregnancy rates from 1998 to 2003 in order to test hypothesis 1: that Virginia counties that have implemented a comprehensive sex education program will have better teen pregnancy outcomes than those that have implemented an abstinence-only education program in their public schools. The study will also compare mean changes in Gonorrhea and Chlamydia rates from 1998 to 2003 in order to test hypotheses 2 and 3: that Virginia counties that have implemented a comprehensive sex education program will have better teen STD outcomes than those that have implemented an abstinence-only sex education program in their public schools.

Hypotheses

Hypothesis 1: Teen Pregnancy Rates.

Counties that promote comprehensive sex education will have a greater decrease, or a smaller increase, in pregnancy rates among females 15-17 years old than counties that promote abstinence-only education.

Hypothesis 2: Teen Chlamydia Rates.

Counties that promote comprehensive sex education will have a greater decrease, or a smaller increase, in teenage Chlamydia rates among both males and females 15-17 years old than counties that promote abstinence-only education.

Hypothesis 3: Teen Gonorrhea Rates.

Counties that promote comprehensive sex education will have a greater decrease, or a smaller increase, in teenage Gonorrhea rates among both males and females 15-17 years old than counties that promote abstinence-only education.

Sample

A sample of 16 counties and county equivalents (independent cities; hereafter, I will use the term "county" for both independent cities and areas legally designated as counties) was chosen from a total of 135 Virginia counties. Of these counties, 4 were from Southwest, 4 from Central, 4 from Northwest, 2 from Northern, and 2 from Eastern Virginia (Table 1) (Virginia Department of Health, Virginia Center for Health Statistics 2005a). The sample was chosen based on the availability of program information on sex education programs within each county. Through personal communication with the coordinator of the abstinence education initiative for the state of Virginia, grantee recipients of federal funding provided by the Abstinence-Only-Until-Marriage initiative was chosen as a means to identify the counties that promote abstinence-only education. Of the 135 counties, ten counties received federal funding for abstinence-only education, two of which I excluded from the sample because they were selected by the federal government to be used as comparison group counties in potential future program evaluations, leaving 8 abstinence-only counties in the sample (Virginia Department of Health, Office of Family Health Services 2005).

Table 1. Frequency Distribution of Virginia Region (N=16)

Region	Frequency	Percent	Valid Percent	Cumulative Percent
Southwest	4	25.0	25.0	25.0
Central	4	25.0	25.0	50.0
Northwest	4	25.0	25.0	75.0
Northern	2	12.5	12.5	87.5
Eastern	2	12.5	12.5	100.0
Total	16	100.0	100.0	

Note: Data obtained from Virginia Department of Health, Virginia Center for Health Statistics (2005b) for years 1998-2003

Of the remaining 125 counties, eight that promote comprehensive sex education were chosen for the sample. These counties were identified through a variety of sources, including informants within county school boards and organizations dedicated to sexual education and prevention. The eight comprehensive counties chosen were the only counties described by my informants to be counties promoting comprehensive sex education, indicating that additional comprehensive counties may have existed within the remaining population, but were not identified as they lacked federal funding by which to be identified through, as well as mandated official documentation of sex education program activity. The sample composition of exactly eight counties promoting abstinence-only education and eight counties promoting comprehensive sex education was purely coincidental.

Documentation of all school-based programs (i.e., those implemented on school grounds, during normal school hours) appeared to be accurate as informants' responses were consistent upon multiple contacts and unofficial documentation noting the agency's program activity for each county or funding record under the abstinence-only-until-marriage initiative was provided through e-mail correspondence. However, no official

state or federal written documentation was provided to verify the verbal or email correspondence provided by agency representatives.

All 16 counties included in the sample were located east of Roanoke (Table 1), and all but one were in metropolitan areas. The non-metropolitan county was located close enough to a metropolitan area to benefit from access to reproductive health care services (U.S. Census Bureau 2005). A possible explanation why rural counties were not more represented in the sample is that rural counties may lack the resources and personnel necessary for grant writing efforts in order to solicit the federal funds, a required condition for inclusion in this study as an abstinence-only county. The grand mean for 1999 reported mean family income over all 16 counties sampled was \$26,421.19 per year (Table 2), with slightly over half of the counties falling between \$20,000 and \$29,999 per year (Table 3) (U.S. Department of Commerce, Bureau of Economic Analysis 2005).

Table 2. 1999 Descriptive Statistics of Mean Family Income (N=16)

	Mean (\$)	Median (\$)
Mean Family Income	26421.19	22180.00

Note: Data obtained from U.S. Department of Commerce, Bureau of Economic Analysis for 1999

Table 3. 1999 Frequency Distribution of Mean Family Income (N=16)

Family Income	Frequency	Percent	Valid Percent	Cumulative Percent
\$0-\$19,999	2	12.5	12.5	12.5
\$20,000-\$29,999	10	62.5	62.5	75.0
\$30,000-\$39,999	2	12.5	12.5	87.5
\$40,000-\$49,999	2	12.5	12.5	100.0
\$50,000 & up	0	0.00	0.00	
Total	16	100.0	100.0	

Note: Data obtained from U.S. Department of Commerce, Bureau of Economic Analysis for 1999

Every sampled county met either abstinence-only education or comprehensive sex education program criteria for at least four years between 1998 and 2003. Although no sampled county maintained the program for all six years, at no time during 1998-2003 did any sampled county implement another program. Counties that chose not to teach sex education for at least four years, along with counties that fell into any other type of sex education category or mixture of programs for any of the years 1998-2003, were not included in the sample.

Dependent Variables

This study examines dependent variables representing changes in three possible undesirable outcomes of sexual activity: the pregnancy rate among females aged 15-17 years, and Chlamydia and Gonorrhea infection rates among both males and females aged 15-17 years. The pregnancy rate equals total combined live births, abortions, and miscarried pregnancies among females aged 15-17 in a given county, per 1000 females in that county in that age group. Chlamydia and Gonorrhea infection rates are measured as the number of infected males and females aged 15-17 years in a given county, per 1000 teens in that county in that age group (Virginia Department of Health, Division of HIV, STD, and Pharmacy Services 2005).

One would not expect a county's sex education program to affect teen pregnancy or STD rates instantaneously. For example, the program's full effect might not appear until students had participated for two or more years successively. Additionally, if a program were ineffective, higher rates of inadequately protected sexual activity among teens may occur immediately, but the consequences of the behavior such as pregnancies

or STD infections would tend follow at a delayed pace. Furthermore, all sexual education programs aim to influence participants' sexual behavior for years to come. Considering these issues, it is appropriate to measure the dependent variables as change in pregnancy and STD rates over several years.

The three dependent variables will be computed for each county in two steps. First, three-year mean rates will be calculated for the periods 1998-2000 and 2001-2003 to minimize random year-to-year measurement error due to small annual totals of teen pregnancies and STD infections in less populated counties. Second, the three-year mean rates for the earlier period (1998-2000) will be subtracted from those for the more recent period (2001-2003). The resulting values are negative if the rate declined during the period, positive if it increased, and equal to zero if it did not change. Expressed in formulas:

$$R_P = \frac{(R_{P2001} + R_{P2002} + R_{P2003})}{3} - \frac{(R_{P1998} + R_{P1999} + R_{P2000})}{3}$$

where R_P = the change in three-year mean pregnancy rates between 1998-2000 and 2001-2003, and $R_{P\text{ YEAR}}$ (e.g. R_{P2001}) = the pregnancy rate for each specific year.

$$R_C = \frac{(R_{C2001} + R_{C2002} + R_{C2003})}{3} - \frac{(R_{C1998} + R_{C1999} + R_{C2000})}{3}$$

where R_C = the change in three-year mean Chlamydia rates between 1998-2000 and 2001-2003, and $R_{C\text{ YEAR}}$ (e.g. R_{C2001}) = the Chlamydia rate for each specific year.

$$R_G = \frac{(R_{G2001} + R_{G2002} + R_{G2003})}{3} - \frac{(R_{G1998} + R_{G1999} + R_{G2000})}{3}$$

where R_G = the change in three-year mean Gonorrhoea rates between 1998-2000 and 2001-2003, and $R_{G\text{ YEAR}}$ (e.g. R_{G2001}) = the Gonorrhoea rate for each specific year. See descriptive statistics for the three-year means in Table 4 and Table 5.

Table 4. 1998-2000 Descriptive Statistics (N=16 x 3 years)

Variable Name	Mean	SD	Median	Minima	Maxima	25 th Percentile	75 th Percentile
Teen Pregnancy Rate 15 to 17	50.02	27.18	47.05	14.50	136.90	27.48	67.45
Chlamydia Rate 15 to 17	18.69	16.57	15.77	0.00	63.88	6.26	23.61
Gonorrhoea Rate 15 to 17	7.89	10.42	4.64	0.00	43.54	0.00	12.26

Note: Pregnancy data obtained from Virginia Department of Health, Virginia Center for Health Statistics (2005b) for years 1998-2000, STD data obtained from Virginia Department of Health, Division of HIV, STD, and Pharmacy Services for years 1998-2000

Table 5. 2001-2003 Descriptive Statistics (N=16 x 3 years)

Variable Name	Mean	SD	Median	Minima	Maxima	25 th Percentile	75 th Percentile
Teen Pregnancy Rate 15 to 17	38.92	26.95	29.80	9.30	109.50	18.10	56.48
Chlamydia Rate 15 to 17	18.27	17.15	13.37	0.00	75.54	4.60	25.44
Gonorrhoea Rate 15 to 17	9.08	12.78	2.73	0.00	50.85	0.00	13.45

Note: Pregnancy data obtained from Virginia Department of Health, Virginia Center for Health Statistics (2005b) for years 2001-2003, STD data obtained from Virginia Department of Health, Division of HIV, STD, and Pharmacy Services for years 2001-2003

Independent and Control Variables

The independent variable is the type of sex education program the county or city school system has implemented, as explained above: a comprehensive sex education program or an abstinence-only sex education program. A comprehensive sex education program is defined as a multi-faceted program designed to inform students on sexual and reproductive issues often including, but not limited to, sexuality, reproductive health and wellness, reproductive services, contraception, and STD and HIV/AIDS prevention. An abstinence-only sex education program is defined as sexuality education based solely on abstaining from sex as the only means of preventing unplanned pregnancy, STD's, and HIV/AIDS (Planned Parenthood Federation of America, Education and Social Marketing Group 2005).

I contacted informants in the Virginia Department of Health, county school boards, and organizations dedicated to sexual education and pregnancy and STD prevention to determine the type of sex education program instituted in as many Virginia counties and independent cities as possible. Due to the politically-sensitive nature of this study and officials' and organization leaders' concerns about obtaining federal funds and/or avoiding public controversy, my informants only sparingly provided me information on which counties use which types of sex education programs. Federal funding for abstinence-only sex education was the criterion for classifying a county as having that type of sex education program. As mentioned earlier, documentation of school-based programs appeared to be accurate as informants' responses were consistent upon multiple contacts, and unofficial documentation noting the agency's program activity for each county or funding record under the abstinence-only-until-marriage

initiative was provided through e-mail correspondence. However, no official state or federal written documentation was provided to verify the verbal or email correspondence provided by agency representatives. Program documentation may have also been incomplete due to the fact that Virginia's core curriculum for sex education, *Family Life Education*, is no longer mandated by the state to be taught in public schools. While *Family Life Education*, including sex education, is up-to-date and available to educators, state law does not require school boards to teach it, leaving such decisions to local school boards (Virginia Department of Education, Office of Student Services 2005).

Method of Analysis

Given the small sample size of the study, inferential statistics are not appropriate. Instead, calculating the change in mean rates of teen pregnancy, Chlamydia infection, and Gonorrhea infection, by type of sex education program is the most appropriate method to identify the type of sex education program that promotes lower rates among minors in Virginia. The values of the dependent variables, calculated by the formulas given above, will be averaged (with means) across counties within each of the two types of sex education programs.

Although the small sample size essentially precludes using control variables to allow for the possibility that factors other than the sex education programs caused the pregnancy and STD rates to change, my use of changes in the rates from 1998 to 2003, instead of absolute rates at one point in time, helps to take into account many differences among the counties at the outset of the period examined here.

Chapter 5

Analysis

Results

Table 6 presents the results of my analysis, beginning with the teen pregnancy rate. The mean change for three-year-average teenage pregnancy in the eight abstinence-only counties for 1998-2000 through 2001-2003 is -8.61, indicating a decrease in teenage pregnancies of 8.61 per 1,000 females 15-17 years old. The corresponding mean change for the eight comprehensive counties is -13.58, indicating a decrease in teenage pregnancies of 13.58 per 1,000.

Table 6. Change in Mean Rates (1998-2000) and (2001-2003), by Program Type

Dependent Variable	Comprehensive (N=8)	Abstinence-Only (N=8)
Change in Mean Teen Pregnancy Rate	-13.58	-8.61
Change in Mean Chlamydia Rate	-3.36	2.53
Change in Mean Gonorrhea Rate	-0.22	2.61

Note: Pregnancy data obtained from Virginia Department of Health, Virginia Center for Health Statistics (2005b) for years 1998-2003, STD data obtained from Virginia Department of Health, Division of HIV, STD, and Pharmacy Services for years 1998-2003

The mean change for three-year-average Chlamydia infection in the eight abstinence-only counties for 1998-2000 through 2001-2003 is 2.53, indicating an increase in infections of 2.53 per 1,000 males and females 15-17 years old. The corresponding mean change for the eight comprehensive counties is -3.36, indicating a decrease in Chlamydia infection of 3.36 per 1,000. See Table 6.

The mean change for three-year-average Gonorrhea infection in the eight abstinence-only counties for 1998-2000 through 2001-2003 is 2.61, indicating an increase in infections of 2.61 per 1,000 males and females 15-17 years old. The corresponding mean change for the eight comprehensive counties is -0.22, indicating a decrease in teenage Gonorrhea infection of 0.22 per 1,000. See Table 6.

The results support all three hypotheses in their entirety. Supportive evidence for Hypotheses 1, 2, and 3 indicates that counties that promote comprehensive sex education in schools have experienced a greater decrease in teenage pregnancy rates among females 15-17 years old by 4.97 (13.58 - 8.61) per 1,000. Furthermore, counties that promote comprehensive sex education in schools have, on average, experienced decreases in Chlamydia and Gonorrhea infection rates among males and females 15-17 years old (by 3.36 and .22 per 1,000, respectively), whereas counties that promote abstinence-only education have experienced increases in Chlamydia and Gonorrhea infection rates of 2.53 and 2.61 per 1,000, respectively.

Using data from the entire state as a baseline, the outcomes for the two types of sex education programs clearly differ enough to be meaningful. Comparison of these results with the distributions of pregnancy and STD rate changes for all 135 Virginia counties reveals that comprehensive and abstinence-only counties have substantially different outcomes for the three dependent variables. Although the previous discussion was based on means, I use median rate changes below to facilitate comparisons to the statewide distributions. However, these medians, like the means discussed above, still support Hypotheses 1, 2, and 3.

The baseline comparisons for the analysis are the distributions, for all 135 Virginia counties, of change in the three-year-average teenage pregnancy rates per 1,000 females 15-17 years old and of changes in the three-year-average Chlamydia and Gonorrhea infection rates per 1,000 males and females 15-17 years old. These distributions are separated into four quartiles with boundaries at the 25th, 50th, and 75th percentiles. The baseline statewide quartile boundaries for teenage pregnancy are -14.4, -7.97, and -3.57 respectively, with the median change for abstinence-only counties falling within the 2nd quartile of the baseline distribution at -9.73 and the median change for comprehensive counties falling within the 1st quartile of the baseline distribution at -15.68. In other words, the median pregnancy rates associated with the respective sex education programs differ enough that they fall in different quartiles of the statewide pregnancy rate distribution. See Table 7.

Table 7. Comparison of Distribution of Change in Mean Pregnancy Rates (1998-2000) and (2001-2003) by Program Type Against the Distribution of Change in Mean Pregnancy Rates (1998-2000) and (2001-2003) for Baseline of All VA Counties

Pregnancy Rates	Baseline: All VA Counties (N=135)	Comprehensive Program Counties (N=8)	Abstinence-Only Program Counties (N=8)	All Counties by Program Type (N=16)
Median	-7.97	-15.68	-9.73	-13.92
25 th Percentile	-14.4	-20.42	-15.5	-18.37
75 th Percentile	-3.57	-4.04	-1.17	-2.84
Minimum	-52.87	-30.7	-20.9	-30.7
Maximum	28.67	4.23	5.67	5.67
Range	81.53	34.93	26.57	36.37
Mean	-8.33	-13.58	-8.61	-11.1
Std. Dev.	11.06	11.03	8.98	10.05
N	135	8	8	16
Median of Abstinence-Only Counties in:		2 nd Quartile for Entire State		
Median of Comprehensive Counties in:		1 st Quartile for Entire State		

Note: Pregnancy data obtained from Virginia Department of Health, Virginia Center for Health Statistics (2005b) for years 1998-2003

The statewide 25th, 50th, and 75th percentiles for Chlamydia infection are -0.93, 0.11, and 3.09 respectively, with the median change for abstinence-only counties falling within the 4th quartile of the baseline distribution at 3.4 and the median change for comprehensive counties falling within the 3rd quartile of the baseline distribution at 0.14. Thus, as in the case of pregnancy rates above, median changes in Chlamydia rates associated with the respective sex education programs differ enough that they are in different quartiles of the statewide distribution. See Table 8.

Table 8. Comparison of Distribution of Change in Mean Chlamydia Rates (1998-2000) and (2001-2003) by Program Type Against the Distribution of Change in Mean Chlamydia Rates (1998-2000) and (2001-2003) for Baseline of All VA Counties

Pregnancy Rates	Baseline: All VA Counties (N=135)	Comprehensive Program Counties (N=8)	Abstinence-Only Program Counties (N=8)	All Counties by Program Type (N=16)
Median	0.11	0.14	3.4	1.72
25 th Percentile	-0.93	-4.94	-0.65	-1.05
75 th Percentile	3.09	3.45	5.57	4.5
Minimum	-38.34	-31.27	-2.65	-31.27
Maximum	14.71	4.73	5.92	5.92
Range	53.05	36	8.57	37.19
Mean	0.12	-3.36	2.53	-0.41
Std. Dev.	7.41	11.78	3.24	8.89
N	135	8	8	16
Median of Abstinence-Only Counties in:	4 th Quartile for Entire State			
Median of Comprehensive Counties in:	3 rd Quartile for Entire State			

Note: STD data obtained from Virginia Department of Health, Division of HIV, STD, and Pharmacy Services for years 1998-2003

The statewide 25th, 50th, and 75th percentiles for Gonorrhea infection are 0, 0, and 2.71 respectively, with the median change for abstinence-only counties falling within the 3rd quartile of the baseline distribution at 0.61 and the median change for comprehensive counties falling within the 1st quartile of the baseline distribution at -0.83. This result

follows the same pattern as the pregnancy and Chlamydia rates above: counties with comprehensive programs tend to fall at a very different – and better – location in the statewide distribution than the counties with abstinence-only programs. See Table 9.

Table 9. Comparison of Distribution of Change in Mean Gonorrhea Rates (1998-2000) and (2001-2003) by Program Type Against the Distribution of Change in Mean Gonorrhea Rates (1998-2000) and (2001-2003) for Baseline of All VA Counties

Pregnancy Rates	Baseline: All VA Counties (N=135)	Comprehensive Program Counties (N=8)	Abstinence-Only Program Counties (N=8)	All Counties by Program Type (N=16)
Median	0	-0.83	0.61	0.22
25 th Percentile	0	-1.98	-1.27	-1.9
75 th Percentile	2.71	2.83	6.38	3.64
Minimum	-13.02	-4.8	-4.44	-4.8
Maximum	25.64	3.77	14.72	14.72
Range	38.66	8.56	19.15	19.51
Mean	1.57	-0.22	2.61	1.19
Std. Dev.	5.36	2.95	6.01	4.8
N	135	8	8	16
Median of Abstinence-Only Counties in:		3 rd Quartile for Entire State		
Median of Comprehensive Counties in:		1 st Quartile for Entire State		

Note: STD data obtained from Virginia Department of Health, Division of HIV, STD, and Pharmacy Services for years 1998-2003

In summary, vis-à-vis the baseline distribution for the entire state of Virginia, all three comparisons place the median change for comprehensive counties one quartile or more lower than that of abstinence-only counties. The separations between the medians for each comparison are large enough (i.e., one or more quartiles apart) to indicate substantively significant differences in the apparent outcomes of the two types of sex education programs.

Chapter 6

Conclusions

Currently, under the Abstinence-Only-Until-Marriage policy, abstinence-only education is the only sex education initiative eligible for and receiving federal funds. As there is little scientific evidence to suggest that abstinence-only-until-marriage education programs are effective in preventing or reducing teenage pregnancy and STDs, such programs and their sole eligibility of federal funds are called into question.

This study examined whether the implementation of comprehensive sex education programs in Virginia schools would tend to lower pregnancy and STD rates among minors more effectively than the implementation of abstinence-only programs. I anticipated that counties with comprehensive sex education programs would tend to have better trends in pregnancy and STD rates among minors than counties with abstinence-only programs. The results supported my hypotheses, indicating a greater decrease in teenage pregnancy rates for counties implementing comprehensive sex education programs in Virginia schools as opposed to those implementing abstinence-only education programs. Furthermore, the results have shown absolute decreases in Chlamydia and Gonorrhea infection rates in comprehensive program counties, while showing absolute increases in Chlamydia and Gonorrhea infection rates in counties promoting abstinence-only education.

The most vital limitation in this study is that it does not encompass the entire state of Virginia. Based on the availability of sex education program data, only 16 counties were included in the sample, a fraction of the total number of counties in Virginia.

Because of this limitation, the results may not reveal the true impact of program type as it relates to teenage pregnancy and STD rates for the state. Ideally, official written documentation of sex education program activity would be mandated, thus data would have been available for each county, resulting in more reliable results as demonstrated in the analysis specified in Table 7, 8, and 9.

While this study focused only on school-based sex education programs, an expansion of the study to include community-based sex education programs and programs operated by private or non-profit organizations housed outside of school grounds is needed. By expanding the study beyond school-based programs, the study would be more realistic as the majority of sex education does not take place in school settings. School-based programs were chosen for the study only as their records were more easily obtained due to the federal funding of abstinence-only-until-marriage education programs. An ideal study would also include abstinence-based or abstinence-plus programs in addition to abstinence-only and comprehensive-based programs.

Due to the politically sensitive nature of this study, detailed records of sex education program data for each county are scarce. Because the state of Virginia no longer mandates sex education in schools and leaves such policies up to local school districts, records are often not kept according to professional standards or not kept at all (Virginia Department of Education, Office of Student Services 2005). This is especially true of comprehensive sex education program data. As these programs are not federally funded, records are not easily obtained. However, abstinence-only-until-marriage program records were more easily obtained for the study by following the trail of Abstinence-Only-Until-Marriage federal funding to their grantee recipients, provided

through communication with the coordinating representative of the abstinence education initiative for the state of Virginia (Virginia Department of Health, Office of Family Health Services 2005).

This study suffered under extraordinary political restraint, thus limiting the examination of teenage pregnancy and sexually transmitted disease to a small sample of Virginia counties, where detailed records were available identifying the type of sex education program implemented within each county. The conclusions, however, have vast policy implications for the future of sex education. While the results may not reveal the true impact of program type as it relates to pregnancy and STD rates for the entire state, they do represent the impact of program type as it relates to pregnancy and STD rates for the counties included in the sample. Examination of selected counties has shown that counties promoting comprehensive sex education in schools tend to have more improvement in pregnancy rates among minors than counties promoting abstinence-only education. Comprehensive program counties also have experienced decreases in STD rates for minors, while counties promoting abstinence-only education experienced increases. Although these results only pertain to the 16 counties analyzed in this study, they certainly provide no scientific evidence to suggest that abstinence-only education programs are as or more effective in reducing teenage pregnancy and STDs in these counties than comprehensive sex education programs. The results rather indicate that comprehensive sex education is a better alternative to abstinence-only education.

Furthermore, if documentation of county school systems' sex education program types and activities were mandated by the federal or state government, it would be possible to make a much clearer assessment of different programs' impact on pregnancy

and STD rates in Virginia, thus providing a model for additional states to follow. The impact of having documentation available on the sex education program type and activity for every county is underscored by the comparison of abstinence-only and comprehensive sex education counties within the statewide distributions on pregnancy and STD rates for minors shown in Table 7, 8, 9. Only when official written documentation of sex education program type has been made available for every county, can an analysis provide a complete and accurate picture of the findings as they pertain to an entire state population. The findings of this study, along with its limitations and the unavailability of documentation necessary to provide scientific evidence to support any sex education program in its entirety, impose a crucial question for policy-makers and the current administration: How is the federal budget for fiscal year 2006 able to include \$206 million to be allocated for abstinence-only-until-marriage education programs, when such programs have yet to provide scientific evidence of their effectiveness in reducing or eliminating pregnancy and STDs? As President George W. Bush announced that his budget would reduce or eliminate government programs not providing results, it only seems appropriate to question federal spending on abstinence-only-until-marriage education programs without further scientific research to determine their effectiveness (Alan Guttmacher Institute 2005). Legislative mandates for documentation of sex education program types and activities are absolutely necessary in order to determine the effectiveness and success of these various sex education programs.

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