An Evaluation of the Sexual Education Program in the Public School System of Athens County, Ohio

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Michael C. Ritter
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This thesis titled
An Evaluation of the Sexual Education Program in the Public School System
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by

MICHAEL C. RITTER

has been approved for
the Department of Political Science
and the College of Arts and Sciences by

_____________________________________________________

Jay E. Ryu
Associate Professor of Political Science

_____________________________________________________

Benjamin M. Ogles
Dean, College of Arts and Sciences
ABSTRACT

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The purpose of the current study is to evaluate the sexual education program in the public school system of Athens County, Ohio. The local program generally seeks to promote health and disease prevention through information, communication skills, and decision-making skills. The local program does not adhere to federal Title V guidelines, since it covers as part of its curriculum issues related to contraception and sexually transmitted diseases. This comprehensive nature is a nationwide trend. Additionally, the state of Ohio does not require that health education, generally, be taught in public schools. Though many comprehensive programs are effective, many others are not. Therefore, it is necessary and valid to investigate if the local program is effective, and if so, why. An interrupted time series analysis demonstrated a weak, short-term effect. The pregnancy rate for 15 to 19 year-olds and the birth rate for 18 to 19 year-olds both declined. However, the program effect was not maintained over time. Indeed, STD rates and the birth rate for 18 to 19 year-olds all increased over time. Process analysis shows that the short-term effect may be due to the logical ordering of material or the personal involvement that the student project creates. Additionally, the program impact may fade away in the long run due to the short amount of time the students are exposed to sexual education, or the lack of teacher accountability.

Approved: _____________________________________________________________

Jay E. Ryu

Associate Professor of Political Science
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EXECUTIVE SUMMARY

The purpose of the current study is to evaluate the sexual education program in the public school system of Athens County, Ohio. Even though research has shown that the national trend of adolescent pregnancy has steadily declined, adolescent sexuality still remains an important issue to consider. This is because, despite the declining trend, American teenagers still have higher rates of pregnancy and birth compared to their counterparts in Western Europe. Additionally, for Athens County specifically, teenage pregnancy and birth rates have slowly been creeping back up since about 2002. Rates of certain sexually transmitted diseases, such as Chlamydia and gonorrhea, have also been on the rise in recent years.

It is also important to continually consider adolescent sexuality due to the potential and actual ramifications it has on varying levels of policy. The societal effects and implications of unintended teenage pregnancy are negative and serious. Teenage mothers are more likely to be less educated, unmarried, and have lower income. These impacts place an unnecessary strain on public assistance services. Nearly eighty percent of adolescent mothers receive public assistance in some form, and they also tend to receive it for longer periods of time than do women who delay childbirth. Teenage fathers are more likely to have less education and to be involved with drugs and other delinquent behaviors, placing strain on the criminal justice system.

Federal policy dictates that if states want to receive funding for sexual education then it must be abstinence-only. Under Title V of the Social Security Reform Act of 1995, abstinence is considered to be the expected standard and exclusive purpose of sexual education, but only for states that elect to submit an application for funding.
However, one study suggests that approximately three-quarters of surveyed students and teachers stated that they received or taught material related not only to abstinence, but also sexually transmitted diseases and birth control. Programs that include material beyond simple abstinence are generally referred to as comprehensive. From these results it is clear that comprehensive sexual education is the mainstream trend across the nation. The program in Athens County has followed this trend. The health curriculum, which includes comprehensive sexual education, was approved by the Athens City Board of Education on February 22, 2001.

Overall, research has demonstrated that abstinence-only education does not work and that comprehensive education does, relatively speaking. However, some of these results may be politicized. One study proposes that comprehensive programs that encompass a large majority of seventeen different characteristics are the most effective. Those that do not, however, are far less effective, or not at all.

Quantitative data analysis from the current study demonstrated that the Athens program is effective in reducing the pregnancy rate for 15 to 19 year-olds, as well as the birth rate for 18 to 19 year-olds. However, this is only a short-term impact, and a weak one at that. Results indicated that the long-term impact of the program yields an increase in pregnancy rate for 18 to 19 year-olds, as well as rates of Chlamydia and gonorrhea for 15 to 19 year-olds. While there is some immediate benefit resulting from the program, long-term effects are not present. A program that does not have lasting positive outcomes cannot be considered effective. These results are consistent with studies performed by Kirby, who states that while some comprehensive programs are effective over time, many only demonstrate positive results for a few months.
The researcher’s in-depth process analysis shows that a variety of possible factors exist that may explain these bifurcated short and long-term effects. First, the sexual education material is only one part of a larger health curriculum. The curriculum in whole only runs for approximately ten weeks. Therefore, issues related to sexuality are covered for a short amount of time. Additionally, with students having to learn other topics, retention of sexuality-specific information may be limited. Second, health teachers are given virtually complete discretion in the classroom. While some research shows that “street-level” discretion can improve the performance of public organizations and programs, other research has shown that public agencies are more likely to perform effectively when they have attentive and supportive relations with oversight authorities. A third possibility, related to the last point, is that there is a lack of support, monitoring, and supervision. Kirby has shown that these three elements are consistent characteristics of effective comprehensive programs. The local curriculum is not required by the state Board of Education and receives no funding on any level. Teachers must seek out information and supplies on their own, sometimes recruiting the help of other organizations, like Planned Parenthood.

According to an interview conducted with a local administrator for this study, the No Child Left Behind Act of 2001 has created a situation where school administrators are so concerned with passing standardized tests that they do not concern themselves with the health curriculum, which is not required by the state. Integrating this curriculum into the larger educational objectives by doing things like firmly drawing from theory, utilizing multiple activities, and increasing oversight and support may give the program a better chance of being effective.
CHAPTER 1: INTRODUCTION, POLICIES, AND TRENDS

The aim of this study is to evaluate the sexual education program in the public school system in Athens County, Ohio. Such a study as this is important for a few reasons. First, in recent history there has been an overall decline in adolescent pregnancy across the nation. Do comprehensive sexual education programs, like the local program studied here, contribute to that trend? Second, research has shown that a variety of characteristics exist to describe sex education programs that are effective. Does the local program exemplify these characteristics? This study will ultimately contribute to this body of knowledge by supporting or contradicting these characteristics or perhaps by developing new ones. In this way, by fitting the local program into a broader framework, the current study will bring with it some generalizability. More broadly, the importance of evaluating sex education programs lies in the fact that current American society is highly sexualized. Young people are growing up in an environment where sex sells, not only on television, but in personal lives. Therefore, it is necessary to ensure that our youth receive adequate information and skill development in order to lead healthy lives.

National Trends and Policy

Since approximately 1990, rates of teenage pregnancy, birth, and abortion have steadily declined on a national level. According to the Centers for Disease Control and Prevention (CDC), adolescent birth rates declined 28 percent from 1990 to 2002 (NCHS, 2006). Abortion rates declined 46 percent and pregnancy rates 35 percent, both in the same time period. By comparison, there was also a drop in the overall pregnancy rate – 12 percent – between 1990 and 1999 (NCHS, 2003). So what is the point then in studying another sexual education program? Sexual education and other policies,
whether implemented on the national, state, or local level, clearly appear to be successful in the battle against teen pregnancy. But there are three problems with this assumption. First, an estimated 33 to 50 percent of pregnant teenagers do not seek out prenatal services, a proportion which is about two times higher compared to pregnant women who are in their early twenties (Flynn, Budd, & Modelski, 2008). Therefore, they would never see a doctor or go to a facility that would report the number of pregnant teenagers they have seen. Also, if some data are composed from personal surveys or interviews, then there is a high likelihood of social desirability effects occurring. This means that there is some level of under-reporting likely occurring.

Second, despite the declining trend, American teens still have higher rates (number per 1,000 in a given population) of pregnancy and birth compared to their Western European counterparts. According to Darroch, Frost, and Singh (2001), the trend closely mirrors that of England’s, except that it remains approximately twenty units higher throughout compared to the other countries (Table 1). Rate trends for Canada, France, and Sweden are even lower than England’s. Additionally, the United States had a higher percentage of 20 to 24 year-olds in the mid-1990’s who had a birth by age 15, 18, and 20, compared with the same countries (Darroch, Singh, and Frost, 2001). These studies also concluded that variations in level of sexual activity were very little between the countries. Additionally, they also found a higher incidence of sexually transmitted diseases (STDs) in the United States. So basically American and European teenagers are engaging in more or less the same amount of sexual activity, but European teens have lower incidents of pregnancy, birth, and, sexually transmitted diseases.
According to Berne and Huberman (1999), other developed nations, like the ones just mentioned, have seen lower teen birth rates due to mandatory, medically accurate sexual education programs; easy access to contraception; social acceptance of sexual expression; and government support for accurate information and services. American policies and programs, while perhaps effective to some extent, could clearly be doing better.

Finally, a recent study reported by the CDC’s National Center for Health Statistics (NCHS) shows that the national adolescent birth rate has broken with the long-standing trend of decline. They report a 3 percent increase in teen births between 2005 and 2006 (Guttmacher, 2009). Additionally, this report included some results from the Youth Risk Behavior Survey, which has recently indicated a declining use of birth control among teenagers, as well as earlier initiation of first sexual intercourse. This further supports the notion that American policies are lacking in success. Therefore, it is necessary to continue this body of sexual education research in order to establish a firm standard of best practices.

Implications of Adolescent Pregnancy

The societal effects and implications of unintended teenage pregnancy are negative and serious. Teenage mothers are more likely to be less educated, unmarried, and have lower income. These impacts place an unnecessary strain on public assistance services (Breheny & Stephens, 2007). Nearly eighty percent of adolescent mothers receive public assistance in some form, and they also tend to receive it for longer periods of time than do women who delay childbirth (Hoffman, 2006). Teenage fathers are more
likely to have less education and to be involved with drugs and other delinquent behaviors (Tan & Quinlivan, 2006).

In fact, a news release from The Alan Guttmacher Institute (1997) states that teen pregnancy racks up a bill of about $1.5 billion dollars on an annual basis. Additionally, it states that teenagers who consistently use contraception use a fraction of private sector costs for pregnancy and STD services, compared to teens who use no contraception at all. Therefore, contraception is more cost effective.

Perhaps more important than societal effects are the physical effects of early childbirth. Due to many teen mothers not receiving appropriate prenatal care, children born to teenagers are more likely to have a low birth weight, have childhood health problems, be hospitalized, or be abused. Additionally, the infant mortality rate for teen mothers, in 2004, was significantly higher than the overall national average (Mathews & MacDorman, 2007).

In 1996, under the administration of President Bill Clinton, the Personal Responsibility and Work Opportunity Reconciliation Act was passed. As part of this act, not only was Temporary Assistance for Needy Families (TANF) established, but so was the abstinence-only-until-marriage initiative as stated in Title V of the Social Security Reform Act (Section 510(b); Appendix A). This made the federal government’s official stance on sexual education that abstinence-only was the expected standard. The Title V initiative is also known as the State Program, since it is states that apply for the grant. States have discretion in how to spend their grant, provided they institute abstinence-only programs. Additionally, they are required to match every four dollars of federal funds received with three dollars of non-federal money (GAO, 2006).
The inclusion of abstinence-only sexual education in the welfare reform of 1996 served the purpose, some might argue, of preventing more children from being born into poverty and welfare. Under Aid to Families with Dependent Children (AFDC) – the version of welfare prior to TANF – a single mother on welfare received an increase in cash assistance for each child. The logic was that these women would intentionally birth children in order to get more money, and so TANF sought to minimize the amount of cash assistance a family could receive. One way in which it did that was through the Title V initiation of abstinence-only education. If women remained childless, there was a better chance of them gaining an education and/or getting married – both of which would lead to the likelihood of young women not going on the welfare rolls.

In 2005, 47 states plus the District of Columbia received funding through the State Program (GAO, 2006). However, since then, some states have started to refuse applying for the grant. As recently as a year ago, fourteen states had stopped applying for abstinence-only education funds, including New York, California, Connecticut, New Jersey, and Rhode Island (Medina, 2007; “Lose the ‘only,’” 2008).

Toward the end of his term in office, President George W. Bush cut Title V spending, but proposed increases for Special Projects of Regional and National Significance (SPRANS) and the Adolescent Family Life Act (AFLA), the other two sources of federal funds for abstinence-only education.

SPRANS, the largest funding source, was signed into law by President George W. Bush as part of the Maternal and Child Health Block Grant. It allows community-based programs that strictly adhere to all eight points of the federal definition of abstinence-only (found in Title V) to receive federal funding (Howell, 2007). In 2005, the program
was renamed Community-Based Abstinence Education (CBAE). Grantees of these funds typically include mentoring groups, parent education groups, and school-based programs, all of which target young people ages 12 to 18 years old (GAO, 2006).

AFLA was started by President Ronald Reagan, authorized under Title XX of the Public Health Service Act (White & White, 1991). It was designed to find ways to prevent teen sex and pregnancy from within the context of the family. Since these grantees try to reach young people before they engage in sexual intercourse, they typically target children ages 9 to 14 years old (GAO, 2006). Certain funds are allocated through the states, while others are allocated directly to local entities. In either case, if states or localities request these funds, they must be used to implement abstinence-only programs.

State Trends & Policy

Overall, the various trends in Ohio have also been consistent with those on the national level. Both adolescent pregnancy rates and birth rates had been on the decline since no later than 1997. But since 2004, both have started to slowly creep back up (Figure 1). Also, Chlamydia and gonorrhea rates have steadily increased in Ohio since 1995 (Figure 2).

Despite these upward trends, however, Ohio does not seem to have responded appropriately with health policy, at least in the realm of the education system. Frank (2005) notes that the state of Ohio received more than $8.5 million from Title V, CBAE, and AFLA funds for abstinence-only education in 2004. However, these funds were received by organizations set outside the public education system. Of the 63 Abstinence Education Service Providers that Frank (2005) covers in his report, not one is a school
district. Rather, federal grantees include several private organizations, religious groups such as Catholic Charities, and county health departments.

According to the Guttmacher Institute (2007), the state of Ohio does not mandate that sex education specifically be taught in public schools. An in-depth, qualitative interview with a local program administrator confirms that. The state does, however, require school boards to establish and maintain a general health curriculum. This curriculum must include education about venereal diseases (STDs), and:

Venereal disease education must emphasize that “abstinence from sexual activity is the only protection that is one hundred percent effective against unwanted pregnancy, sexually transmitted disease, and the sexual transmission of a virus that causes acquired immunodeficiency syndrome” (SIECUS, 2007).

This report goes on to state that sex education programs must stress abstinence until after marriage and that “these points closely mirror the federal definition of ‘abstinence education.’”

In terms of sexual education specifically, the administrator stated that things that look like official state policies or mandates are actually just recommendations. As will be demonstrated and discussed later, the local program adheres to a comprehensive approach. It aims to promote health and protect against risk-taking behaviors by providing students with accurate information and skills to make appropriate decisions.

While the federal government focuses strictly on abstinence-only, it seems that the local program is more in line with the national trend in terms of type of program to offer. Indeed, Kirby (2002) found that approximately three-quarters of surveyed students and teachers stated that they received or taught material related not only to abstinence,
but also sexually transmitted diseases and birth control. It appears that federal funding for sexual education is geared toward community-based programs rather than programs existing within public school systems.

Research generally finds comprehensive programs to be effective compared to abstinence-only ones, as will be discussed in Chapter 2. But, while the local program is minimally effective in the short-term, it fails to sustain this success over time. Elements of these results will be discussed and considered within the context of the broader body of research about what works and why (Chapter 6).
CHAPTER 2: HISTORY AND THEORY OF ABSTINENCE-ONLY AND COMPREHENSIVE SEXUAL EDUCATION PROGRAMS

Sexual education programs have been around for a while, but they have not always been the same. There are two broad ways in which sexual education programs can be understood, according to Franklin and Corcoran (2000). The first is an understanding along the lines of dimensions or categories. Programs exist in a variety of settings, types, and focuses. One dimension centers on the locus of intervention. Programs can be community-based, school-based, or school-linked. Secondly, they can be clinics or non-clinics. The third dimension concerns the type of intervention, specifically abstinence-only or some kind of comprehensive curriculum. The final dimension involves skills-building. Is this an element that is emphasized in the curriculum?

The other way that sexual education programs can be understood is generationally. Franklin and Corcoran (2000) note there have generally been four generations of sexual education programs in America. The first focused on pregnancy-related risks and consequences, as well as knowledge building. The following generation developed the process a little further by including not only knowledge building, but also communication and decision-making skills.

It is with the third and fourth generations, though, where we get our modern social and political debates concerning teen sex. Third generation programs developed as more of a reaction to, rather than an evolution from, the earlier generations. These administrators were concerned with the idea that sexual education be value-free, an idea held to by generations one and two. Thus was born abstinence-only sexual education.
Proponents of abstinence-only believed that sex was wrong outside the context of marriage, or at the very least a mature, loving adult relationship. While some abstinence-only programs are more secular in nature, many others are grounded in Judeo-Christian systems of morality. Indeed, some programs begin each session with a prayer (Kirby, 2000). Abstinence programs can generally be defined as “encourage[ing] only abstinence and not condom or other contraceptive use” (Kirby, 2007a, p. 151). Abstinence is taught as being the best or only practice for preventing pregnancy and disease. Discussions of contraception do not typically occur, but if they do it is usually just to emphasize their failure rates (Committee on Government Reform, 2004). Some abstinence-only proponents argue that inclusion of both abstinence and contraceptive messages at the same time may cause confusion (Christopher, 1995).

Fourth generation programs, like the first two, are comprehensive in nature. These programs generally teach that abstinence is the safest behavior, but they also recognize that some young people will engage in sexual activities. Therefore, they also discuss contraception and STDs. They developed for essentially three reasons comparative to abstinence-only programs.

First, comprehensive program administrators had a value claim that was contrary to that held by abstinence administrators. Since abstinence programs do not cover topics that are perhaps more suitable to teenagers who have already had sex or plan to have sex, comprehensive programs believed that the human rights of these individuals were being violated. Abstinence programs fail to teach adolescents how to engage in safe and healthy sexual practices. This is evidenced by their solely negative stance on
contraception – for example, emphasizing failure rates of condoms. They leave out the potential and actual benefits of utilizing contraception.

The human rights idea comes out of the medical and research principle of informed consent. This principle states that individuals need to be provided with all information, good and bad, positive and negative, beneficial and harmful, so that they themselves can make a fully informed choice. As stated by Santelli (2008), “if adolescents are sexually active, they need information to protect their health and lives” (p. 1790). By providing sexually active teenagers with appropriate information on contraception, they can better make decisions consistent with preventing pregnancy and disease. Fourth generation sexual education programs also seek to permanently alter sexual norms that are prominent among teenagers. Examples include challenging popular media perceptions about sex (namely that sex without protection has no consequences) and challenging issues of peer pressure as related to sexual behavior (Franklin & Corcoran, 2000).

The idea of abstinence-only programs violating human rights also spreads into the second reason why comprehensive programs developed – inaccurate content of abstinence programs. In 2004, Henry Waxman of the United States House of Representatives issued a report to Congress documenting these inaccuracies as they exist within federal programs (Committee on Government Reform, 2004). The Waxman Report, as it is called, highlighted several areas of errors and distortions, including:

1) Abstinence-only curricula contain false information about the effectiveness of contraceptives.
The report indicates that condom failure rates in preventing pregnancy are exaggerated, and that there is a heavy reliance on the idea that condoms are porous and therefore HIV and other infectious microbes can “pass through.” Additionally, curricula utilize a 1993 study by Susan Weller that found that condoms reduce HIV transmission by 69 percent, even though this study was immediately rejected by both the Food and Drug Administration (FDA) and CDC, saying that condoms are far more effective than 69 percent. Indeed, when used properly and consistently, condoms are 98 percent effective (Frank, 2005).

2) Abstinence-only curricula blur religion and science.

Some curricula present specific religious points of view as to when exactly life begins. Not only that, but they present these as being scientific fact, even though they provide inaccurate information in regard to fetus development.

3) Abstinence-only curricula treat stereotypes about girls and boys as scientific fact.

Several curricula teach that girls care less about academic and career achievement, and are weak and need protection provided by men. Additionally, they teach that males are naturally sexually aggressive and lack deep emotions.

4) Abstinence-only curricula contain false and misleading information about the risks of sexual activity.

It is taught in these programs that premarital sex can lead to cervical cancer and a variety of mental health problems, like substance abuse, depression, and suicide. Additionally, data on contraction rates of HIV and Chlamydia are intentionally altered and exaggerated.
While the Waxman Report focuses on the what, a report issued by the Government Accountability Office (GAO) in 2006 seems to answer why federal abstinence-only programs contain false and inaccurate information. The Administration for Children and Families (ACF), which is one entity of the Department of Health and Human Services (HHS), awards grants to both Title V and CBAE programs. However, the ACF does not review the scientific accuracy of curricular materials. They merely ensure that they adhere to the federal definition of abstinence-only education. Indeed, prior to 2006, neither grant required that programs submit educational materials. Since 2006, only CBAE grantees must submit materials as part of the application process. Additionally, ACF does not require individual programs to engage in self-reviews of the information they disseminate.

The Office of Population Affairs (OPA), which administers grant funds to AFLA programs, does review the scientific accuracy of its grantees, using a medical education specialist. However, there are two problems with this. First, materials are reviewed after grantees have been selected. And second, AFLA grants account for the smallest amount of federal spending on sexual education. Title V and CBAE grants account for a far larger proportion of federal funds, with CBAE programs receiving eight times as much funding compared to AFLA programs (GAO, 2006).

A broader problem with accuracy of information exists as well. Even though OPA and the Public Health Service Act require educational materials distributed by HHS and its grantees to be medically accurate, the “federal statute does not define ‘medical accuracy’” (Santelli, 2008). This has opened the door for various stakeholders to politicize the definition of accuracy, as well as scientific methods.
The final reason for the development of comprehensive programs is the uncertain effectiveness of abstinence-only programs to reduce adolescent sexual activity and pregnancy. Granting some inconsistencies, there are a multitude of studies concluding that abstinence programs are ineffective at achieving their goals. Some programs, in fact, may contribute to increases in risky sexual behaviors and pregnancy among teenagers (Christopher, 1995). Kirby (2000) states that several studies found that abstinence programs can contribute to increases in knowledge, and to changes in attitudes and values. However, this attitudinal impact was small and short-term. Additionally, this does not necessarily translate into a modification of potential or actual sexual behaviors. And, according to previous literature, “behavioral measures are superior to the other measures and are the best indicators of the effectiveness of prevention programs” (Franklin & Corcoran, 2000, p. 41).

Christopher (1995) cites one study that did document a behavioral impact of an abstinence-only program, but this too was only short-term. Planned Parenthood (2007), a leading advocate and provider of sexual education and services, states that students of abstinence programs do not refrain from sexual behaviors any longer compared to their counterparts in control groups or comprehensive programs. Additionally, teens who receive abstinence education are far less likely to use condoms or other contraceptives when engaging in sex. The United States Government Accountability Office (2006) has further documented the inconsistent results of abstinence studies, saying that some programs have decreased sexual frequency and number of partners, while others have not. The positive impacts found here though also seem to fall victim to time, as they do
not last. While there may be some signs of life for abstinence-only programs, generally there is little compelling evidence for their effectiveness.

Douglas Kirby, a sociologist and Senior Research Scientist at ETR Associates who has led and shaped research in sexual education for three decades, recently published a meta-analysis comparing the effectiveness of nine abstinence-only programs and 48 comprehensive programs (2008). Of the nine abstinence programs, only two showed any positive effect on behaviors, decreasing frequency of sex and number of partners. However, none of the remaining programs had any impact on a variety of behavioral factors, such as initiation of sex, number of partners, or abstinence in the previous twelve months. No program impacted condom use. Kirby sums up the results by stating that “the lack of behavioral results was quite compelling” (p. 20).

It is important to look more specifically at Ohio, since it ranks fourth in the nation for tax dollars expended on abstinence education (Frank, 2005). Frank developed a fairly comprehensive examination of abstinence-only programs within the state. Since he focused on programs that received funding from the three federal sources, his findings were consistent with those presented by the Waxman and GAO reports. He found that Ohio curricula “contain misleading and false information, scientific errors, and substantial inaccuracies regarding gender stereotypes, STDs, and contraception” (pp. 27-28).

In terms of Athens County, as will be shown in the next chapter, school districts utilize a comprehensive sexual education curriculum. Therefore, they do not receive federal monies. However, it is relevant to mention that an organization exists that has in the past offered abstinence-only education in Athens. Abstinence ‘til Marriage (or ATM)
Education is headquartered in Sunbury, Ohio, but it provides on-location classroom presentation, school assemblies, and a variety of trainings and professional development seminars for teachers of abstinence programs. They also have their own curriculum called “Relationships under Construction.” In 2003-2004, ATM operated in 35 Ohio counties, including Athens. But it appears that ATM has not operated in Athens County since at least the 2006-2007 school year (ATM Education, 2009). Indeed, they currently serve only 17 counties within the state.

By contrast, comprehensive programs have generally been found to be effective at shifting teens’ behaviors toward health and away from risk. Proponents of abstinence-only education claim that comprehensive programs cause teens to engage in sexual behavior earlier and more often, though there is no evidence to suggest that this is true (Planned Parenthood, 2007). In fact, Kirby (2008) found that 47 percent of the comprehensive programs he reviewed actually delayed initiation of sex, while none hastened it. Additionally, some of these programs reduced the frequency of sexual activity, while none increased it. Only one program increased the number of sexual partners. In terms of contraception, only one program decreased contraceptive use, while most others increased use of condoms and other contraceptive methods. Kirby believes these positive behavioral results are “quite strong” since they occurred more frequently in studies utilizing stringent experimental designs (p. 23).

One possible explanation for the difference in effectiveness between the two approaches might be the point of focus. Comprehensive programs, though they encourage abstinence, they also recognize that some teenagers will decide no matter what to have sex. For these individuals, they provide information and skills so that sexually
healthy decisions can be made. Comprehensive programs essentially wage a two-front war, focusing somewhat on abstinence, but throwing most resources at pregnancy and STD prevention through contraception and skills building. Abstinence-only programs, by contrast, only fight on a single front. They are solely concerned with preventing pregnancy and STDs by preventing sex, disregarding the fact that contraceptives prevent these things as well. It seems that it is much easier to convince teenagers to utilize contraception than it is to convince them to just not have sex.

Though comprehensive programs are overall more effective than abstinence-only programs, this does not mean that all comprehensive programs are effective. According to Kirby (2007a; 2007b), approximately two-thirds of comprehensive programs covering both abstinence and contraception, as well as two-thirds of curriculum-based programs, are effective. Through his long career studying sexual education, Kirby has developed an extensive list of characteristics that describe effective curriculum-based comprehensive sexual education programs. Most programs that incorporate all of the characteristics are effective, resulting in positive impacts. Likewise, the programs that are most effective embody virtually all of these characteristics (Kirby, 2007b). There are 17 characteristics in all, focusing on curriculum development, curriculum content, and implementation (Kirby, 2007a; Kirby, 2007b). Despite the extensiveness of the list, it is important that at least some of the key characteristics are discussed here (Refer to Table 2 in this thesis for a complete listing):¹

- Used a logic model approach to develop the curriculum that specified the health goals, the behaviors affecting those health goals, the risk and protective factors

affecting those behaviors, and the activities addressing those risk and protective factors.

Effective programs, whether consciously or not, link specific interventions with behaviors leading to the achievement of broader health goals. Social psychological and educational theories are utilized in order to identify risk and protective factors, and to develop particular activities to address them. Common theories include social cognitive theory, social influence theory, social inoculation theory, and cognitive-behavioral theory (Franklin & Corcoran, 2000).

- Focused narrowly on specific behaviors leading to health goals, gave clear messages about these behaviors, and addressed situations that might lead to them and how to avoid them.

Effective programs provide an explicit, clear, and consistent message. They do not simply relay information to students and leave them to decide what is right. Rather, they direct efforts at convincing students that abstaining from sex and using condoms and other contraception consistently is the right thing to do, and that unprotected sex is undesirable.

- Addressed multiple sexual psychosocial risk and protective factors affecting sexual behavior.

Programs are effective when they are able to take appropriate mediating factors and modify them so as to, in turn, affect sexual behaviors in a positive way. Examples of mediating factors include knowledge, perceptions of risk, personal values and attitudes, self-efficacy, and intentions, among others.
• Included multiple activities to change each of the targeted risk and protective factors.

Effective programs hold discussions using medically accurate information and utilize skill-building activities focused on things like personal values and attitudes, peer norms, communication with adults, and perceptions of risks. They aim to personalize the severity of STDs and pregnancy through actively engaging activities, like role playing and group projects. Additionally, they seek to improve assertiveness and self-efficacy in using their newfound skills.

• Secured at least minimal support from appropriate authorities such as departments of health or education, school districts, or community organizations.

Effective programs obtain some kind of official approval or sanctioning. Even though ineffective programs often get this as well, effective programs tend to have at least a minimal level of continuous monitoring, supervision, and support.

Though it seems clear from the research that comprehensive programs are effective and abstinence-only programs are not, the debate will continue to roll on because of the increasing prominence of abstinence programs. As mentioned above, sexual education programs have largely been comprehensive in nature throughout time. For instance, in 1988, almost all secondary school-based programs taught about STDs and their transmission, birth control, “safe sex” practices, and even abstinence (Darroch, Landry, & Singh, 2000). But since the creation of Title V and CBAE programs, sexual education based on the premise of abstinence has gained more clout. To illustrate this trend, in 1988 only 2 percent of secondary schools taught abstinence as the only method
to prevent pregnancy and STDs, while in 1999, 23 percent taught abstinence only (Lindberg, Santelli, & Singh, 2006; Landry, Darroch, Singh, & Higgins, 2003).

Though the political popularity of abstinence-only has increased in recent history, it is still in the minority. Indeed, approximately two-thirds of school-based sexual education programs still teach some sort of comprehensive curriculum. Additionally, while most teachers and parents believe that students should be taught abstinence, they virtually all also believe that sexually active youth need appropriate information regarding contraception and STDs (Landry, Darroch, Singh, & Higgins, 2003). This suggests that comprehensive programs that include an element of abstinence are highly favored among the public. Indeed, Darroch, Landry, and Singh (2000) found that a significant proportion of abstinence-only teachers believed that contraceptive use is acceptable for young people.

The noted declines in instruction about birth control, combined with increases in abstinence-only education, though perhaps still modest to some extent, may be contributing to the recent upward trends in adolescent pregnancy in this country. This is further evidence for the continuation of the study of sexual education. But now we move on to see how the local program fits into this broader context and debate about what works. It is important to mention from the beginning that the local program is consistent with the more widespread use of comprehensive curricula.
CHAPTER 3: DEVELOPING AN IN-DEPTH PROCESS ANALYSIS OF THE LOCAL PROGRAM THROUGH QUALITATIVE INTERVIEWING

In order to formulate a logical theory about the implementation of the program, a qualitative interview was conducted with a local administrator, specifically a health teacher.\(^2\) A program theory is essentially a model of the program’s logic, indicating the relationship between program inputs or activities and the expected response to them (Stufflebeam, 2000). A program in and of itself is a theory, or put more explicitly, a set of beliefs or hypotheses that establish the underlying path from inputs to intended outcomes (Weiss, 1998). It does not have to be uniformly accepted or “right,” but rather a plausible idea about how the program is supposed to work (Weiss, 1998).

The unearthing of program theory from an evaluation standpoint is important for many reasons. Generally, it allows a researcher to tailor the issues that should be closely examined and to ask relevant questions. But more specifically, it enables a researcher to make sense of quantitative data analyses, especially when the results appear unusual. Additionally, outcome data are only meaningful if the researcher has a strong understanding of not only what the program is, but also how it has been operating (Weiss, 1998).

Though several separate school districts operate within Athens County, the administrator was selected from the Athens City school district. Athens City (and its immediate surroundings) is the largest, most populated town in the county. It is the county seat and houses a mid-sized public university, which is the largest employer in the county. So the selected school district has the largest student enrollment, and therefore the greatest exposure to sexual education in the public school system. Though the

\(^2\) Interview was conducted December 18, 2008 at Athens Middle School in Athens, Ohio.
program theory was developed from information from one district, there is some level of programmatic consistency across the various districts. For example, the Trimble School District, which is situated in the northern part of Athens County, promotes abstinence, but also teaches proper use of condoms and oral contraceptives (Schneider, 2008).

Local program history

On February 22, 2001, the Athens City Board of Education approved a brand new curriculum for a health education course. The curriculum was developed by a council of teachers from the region/county with help from the Ohio Model for Health and Physical Education (personal communication, December 18, 2008). In Athens County, sex-related topics are covered as part of the larger health education curriculum. Prior to this date, health education (including sexual issues) did not exist in the largest school district in the county. Since then, these issues have been provided for students in eighth grade, as well as again in high school. The focus of this study, however, is strictly on the eighth grade conception of the curriculum. While the high school curriculum is not necessarily irrelevant, it simply provides a review of information that has already been received. Overall, the program reflects the recommendations from the state. The state Board of Education recommends the teaching of venereal diseases (mentioned above), as well as demonstrating that abstinence, while not the only option, is the preferred choice.

The eighth grade curriculum encompasses seven specific objectives, five of which the administrator emphasized. Objective 1 is simply a review of pubertal changes, material that is covered initially in fifth grade. Objective 2 is coverage of fertilization and surrogate mothering. Objective 4 covers birth defects. But Objectives 3 and 6 are the bulk of the curriculum. Objective 3 states that students should be able to “recognize
the name of common sexually transmitted infections and their modes of transmission” (Academic Content Manual, 2001, p. 47; Appendix B). Additionally, students are required to complete a project related to HIV/AIDS and give a presentation in front of the class. Abstinence is included in Objective 6, suggesting an emphasis on STD coverage and a reflection of state recommendations. Objective 6 states that students should be able to “demonstrate skills that are important for healthy relationships with the opposite sex” (pg. 47). There are four relevant “Suggested Life Skill Activities” that are provided in the manual for this objective: 1) Explain why it is important to establish limits on the expression of physical affection ahead of time, 2) Demonstrate refusal skills to support the choice of sexual abstinence, 3) Recognize different methods of birth control, and 4) Understand the legal and personal issues of an unwanted pregnancy (pp. 47-48).

This program is clearly not abstinence-only, but it rather definitely includes comprehensive components, as it covers STDs and birth control. However, abstinence is seen as being the best practice. I suggest this for two reasons. First, learning to set limits on expressed affection is reasonably advocating for one to abstain. And second, there is clear support for abstinence in the second activity listed above. Furthermore, demonstrating refusal skills to promote abstinence implies not only an implicit, but also an explicit understanding of how to do this. It is important to note that comprehensive programs do not exclude abstinence. Indeed, a great many comprehensive programs teach abstinence as the best practice. But these programs essentially operate under the assumption that at least some teenagers will engage in sexual activity. Therefore, abstinence may be the best choice, but just not the only choice. So comprehensive programs aim to prepare students to make sexually healthy decisions.
Ultimately, these objectives lead to the achievement of broader goals. The curriculum essentially aims to accomplish the promotion of health and the prevention of disease. Though there are seven different goals, they can basically be broken down into two areas. First, students are expected to comprehend information and concepts related to health and disease. Second, they are expected to develop and demonstrate the ability to utilize decision-making skills, goal-setting skills, and interpersonal communication skills in enhancing health and reducing risk-taking behavior. For these reasons, the Athens program can be characterized as being more comprehensive in its nature.

Other Curricular Characteristics

According to the administrator, a major topic area that is discussed in relation to sexual education is alcohol and drug use; the focus is on alcohol. Initially, the two topic areas are covered separately (sex first then drugs), but afterward are integrated into a larger context. This particular administrator felt it was especially important to cover alcohol and drugs since the school district is situated in a college town. This college town has a very high ratio of bars to student body size, and the university was recently considered one of the biggest party schools in the nation. Therefore, the environment is such that even grade school students feel the pressures of drinking.

It is important to teach these two topic areas together since alcohol and drug use can influence decision-making about matters pertaining to sex and sexuality. When a person is under the influence of drugs or alcohol, it becomes harder to make decisions that are based in sound reasoning. Thus, setting sexual limits may become difficult. Additionally, being under the influence may not just lead to sexual activity, but also to the decision to practice unsafe sex by not utilizing contraception (Leonard, 1998;
Appendix C). According to the administrator, all students are listening and paying attention during discussions of alcohol and sex (personal communication, December 18, 2008). When discussion centers on values and goals, however, drifting occurs.

An increasing concern in the Athens area is the rise in prescription drug abuse, according to the administrator. There are increasing incidents of students coming to school with prescription drugs that do not belong to them. This trend is echoed by a recent survey of college freshmen published by the local university. It noted that of the 20.2 percent of freshmen who reported using drugs, 21.6 percent reported using prescription drugs recreationally (Navera, 2009). This is an eight percent increase from 2005. This trend is not only occurring locally, but nationally as well. Wu, Ringwalt, Mannelli, and Patkar (2008) note that non-prescribed use of prescription pain relievers (PPR) among 12 to 17 year-olds has more than doubled between the early 1990s and 2005 (6 percent to 13 percent). They also found that 35 percent of these users showed symptoms of abuse or dependence.

What is needed in Athens is a systematic way of dealing with this up and coming problem in public schools. Fortunately, a free program exists through the National Association of School Nurses called *Smart Moves, Smart Choices* (NASN, 2009). It is available in two formats. The first is a classroom-based curriculum with a series of four videos accompanied by science and language arts activities. There is also a video for parents. The second format is a student or parent school assembly toolkit, which provides templates of fliers, agendas, and speaker remarks. This would be at least a good starting point for Athens, since the program is freely available and includes an element for parental involvement.
One other topic area that is covered as part of the curriculum is sexual orientation and homosexuality. But since this is eighth grade and the students are only now starting to become aware of their orientation, these issues are only carefully touched on (personal communication, December 18, 2008). It is discussed in a larger context of respect for others and sexual harassment.

**Administrative Characteristics**

The local health education course is a requirement for all eighth grade students in the district. But though the course is required, it does entail an “opt-out” function. Parents may choose to exclude their child from the teaching of certain topics within the course. This function is primarily used in cases of ethnic and cultural differences (personal communication, December 18, 2008). Students are also not divided by ability level.

The course runs for one quarter, or approximately nine to ten weeks. Sexual education is taught as one unit of this overarching health content. Since health education is not required by state-level standards, health teachers are provided little to no funding to accomplish their objectives. Additionally, with No Child Left Behind standards focusing on reading and mathematics, there is little administrative concern for health education programming (personal communication, December 18, 2008). Teachers operate in a system where discretion is high and accountability and support are low.

Due to this lack of concern, health teachers must seek out and gather on their own appropriate information from external resources. One source is the internet. But another, more significant, source is Planned Parenthood. This organization is well-known for pushing its comprehensive sexual education agenda within the political arena. They
provide information, such as a variety of brochures related to sex, alcohol, and diseases (Appendix C). The students utilize these brochures for research for their HIV/AIDS projects. Planned Parenthood is also willing to provide condoms, but the local administrator does not find it acceptable to hand out condoms to the students.

Learning progress is measured through written exams, homework, and the HIV/AIDS project. Students are taught primarily through lecture and videos. No textbooks are available for this course. This further emphasizes the level of teacher discretion in the classroom. Unfortunately, from the administrator’s point of view, the overall course, but particularly the sexual education component, is too short. The administrator felt that the students are not exposed to the material for a long enough period of time.
CHAPTER 4: QUANTITATIVE RESEARCH METHODOLOGY

Data

Data were obtained from the state of Ohio’s Department of Health (ODH) Information Warehouse (2005). This database provides statistics for various population characteristics both on a state level and on a county level. The categories that were used include “marital status,” “pregnancy rate,” “live births,” “gonorrhea,” and “chlamydia.” Since the sex education program focused on STDs, these latter two categories proved beneficial to see if STD contraction had declined. Measures of syphilis, HIV, and AIDS were not included as there were no reported cases for the time frame from 1990 to 2007; or records were not kept.

Model

Dependent Variables

Since the sexual education program under study emphasized abstinence as the best practice, the ideal outcome measure would be one pertaining to sexual activity (sex rate, percentage of study population currently sexually active, etc.). Unfortunately, data could not be obtained to measure sexual activity levels within the county. But given the overall comprehensive nature of the program beyond just abstinence (i.e. the assumption that some teens will engage in sexual activity), examining data for pregnancy and births is appropriate. These data can also serve as a proxy (or representation) of the broader spectrum of sexual intercourse.

Two dependent variables were used to represent sexual activity. The first was the pregnancy rate, which was the outcome of interest. The Ohio Department of Health had three appropriate age ranges: 15 to 17, 18 to 19, and 15 to 19. The pregnancy rate is the
number of pregnancies per 1,000 women in the specified population group (ODH, 2005). The pregnancy rate was the most useful proxy because it covers the widest area of the ideal sexual activity spectrum. It provides the fullest picture and the most accuracy because it is the sum of live births, induced terminations (abortions), and estimated fetal loss (miscarriage or stillbirth). Its weakness is in the fact, for example, that it does not account for sexual intercourse where contraception was used, or where pregnancy did not otherwise occur. Live birth and abortion data are collected from Ohio Vital Statistics Births and Abortions statistical files, respectively. Fetal loss estimates are calculated using the questions from the pregnancy history section of the National Survey of Family Growth, conducted by the Centers for Disease Control and Prevention (CDC) and the National Center for Health Statistics (NCHS) (ODH, 2005). Respondents for this survey include adolescents beginning with age fifteen.

The other dependent variable is live births. The live births category mentioned above serves as a measure of the birth rate. The birth rate is the number of births per 1,000 women in a specified population group (ODH, 2005). This measure allowed the researcher to focus on the desired age group, as opposed to the fertility rate which is “the number of live births per 1,000 women of childbearing age (15 to 44 years) in a population in a given year” (Gelles & Levine, 1999, p. 594). By nature of the fertility rate measure, its age range is far too broad for the needs and purposes of this study. The inclusion of the birth rate was even less ideal than the pregnancy rate. It does not account for stillbirths, miscarriages, or abortions – overall pregnancies. But reasonably, if the birth rate declines, then one can assume either a concurrent drop in the sex rate or an
increase in contraceptive use. Therefore, its inclusion in the study served to strengthen the expected results to a certain degree.

Two other dependent variables – Chlamydia and gonorrhea – serve not only as further proxy for sexual activity, but also for use of barrier contraception. Both variables are based on the number of cases reported to the Ohio Department of Health in the course of a year (ODH, 2005). As shown in the results chapter, there was a recent increase in occurrence of both of these STDs. Three reasonable assumptions can be made about this increase. First, this increase may be explained by increased sexual activity. The more unprotected sex people are having, the more likely there is to be a higher proportion of sexually transmitted diseases. Second, the increase may be explained by declines (or lack thereof) in use of contraception. Or, third, there may be a combination of the two – increases in sexual activity and declines in contraception.

Independent Variables

In order to measure the program’s effect, it was necessary to know what occurred before the program was implemented in terms of the dependent variables. Likewise, in order to produce results for a long-term measure of effectiveness, it was necessary to include data from years occurring after program implementation. The essential point of program evaluation (or impact analysis) is the “comparison of what did happen after implementing the program with what would have happened had the program not been implemented” [italics original] (Mohr, 1988, pp. 2-3).

The program began in 2001 and data were available through varying years. Data for gonorrhea and Chlamydia were available through 2005. Pregnancy rate data ended in 2006. And data for birth rate and marital status were available through 2007. Therefore,
these time ranges served as a post-implementation year counter in order to measure long-term effects. In order to test long-term effects, a dummy independent variable was created, called a post-intervention year counter. A dummy variable indicates the presence or absence of a characteristic by assigning the values 1 or 0 (Poister, 1978). All pre-program years (prior to 2001) were assigned 0, indicating no program existence. Pre-program years for pregnancy rate ran from 1997 to 2000, a fairly short time span for determining the counterfactual. For birth rate, pre-program years ran from 1990 to 2000. Chlamydia pre-program years started with 1995, as did gonorrhea. The post-implementation years were assigned as such: 2001 was assigned to 1 (since this was the first year for the program), 2002 to 2, 2003 to 3, and so on. This indicates successive years of program existence.

For the full time range, a general year counter (a second dummy variable) was created in order to show the general trend of the dependent variables. Since the birth rate had the longest time frame, the general trend counter started with 1990. The year 1990 was assigned to 1, 1991 to 2, 1992 to 3 and on up to 2007, which was assigned to 18. Since the general trend counter includes the timeframe prior to program implementation, it serves as the counterfactual, against which the short and long-term impacts are compared.

Lastly, a third (program) dummy variable was created in order to measure the immediate, short-term program impact after implementation. The short-term impact is usually considered to occur within the first (sometimes the second) year after implementation. In order to measure this effect, all pre-implementation years were
assigned to 0, and all post-years to 1. This merely indicates whether or not the program existed. It does not consider temporality.

After the three independent dummy variables were created, four separate sets of regression analyses were run – one for each of the four dependent variables (pregnancy rate, birth rate, gonorrhea, and chlamydia). From these regressions then, the size, direction (positive or negative), and statistical significance of both the short- and long-term program effects were determined.

**Control Variable**

Control variables are factors, other than the target variables, that may have some impact on the dependent variable. In the case of the present study, factors other than the program that may affect sexual activity include marital status, alcohol and drugs, religiosity (how religious a person is), and television viewing. There is a wealth of literature connecting alcohol to sexual behavior. Alcohol impairs judgment and creates a loss of control, which can and does lead to risky sexual behavior (Coleman & Cater, 2005). Likewise, methamphetamine use predicts sexual activity, multiple partners, and pregnancy among teenagers (Zapata, Hillis, Marchbanks, Curtis, & Lowry, 2008). Religiosity tends to be low during the teen years. Since teens feel less external control from religion, then the probability of them engaging in sexual activities rises (Lefkowitz, Gillen, Shearer, & Boone, 2004). Collins et al. (2004) found that watching sex on television predicted initiation of sexual behavior by teenagers. However, data could only be obtained for marital status of mothers. These data are recorded from birth certificates. A mother is considered married if she is married at the child’s birth, conception, or any
time in between. The marital status variable shows the proportion of mothers who were
married in the selected population (ODH, 2005).

In recent decades, research has well-noted a theoretical divide between marriage
and childbearing (and ultimately sexual intercourse). This divide can likely be attributed
to increases in cohabitation and non-traditional family types, e.g. a homosexual couple
adopting children. Due to this fact it would be reasonable to think that marital status
would not serve as a sufficient control. As mentioned above, control variables are factors
other than the primary independent variables that may have an effect on the dependent
variable. And so if marriage and sex and pregnancy are not theoretically connected, then
they can occur independently of one another. Therefore, marital status would not be a
“cause” or prerequisite for sex and pregnancy. However, there is a minority of research
inclined toward the traditional economic theory of marriage.

Traditional theory holds that marriage does come before sex and pregnancy.
Hotz, Klerman, and Willis (1997) noted an increase in the percentage of women who are
childless by the age of 40 to 44 between the 1970s and 1990s. Increases in childlessness
can be considered synonymous with declines in fertility. They suggest that some of the
increase in childlessness “reflects the decline in the fraction of women who are married
over this same period” (p. 280). This is an explicit assumption that marriage and fertility
are connected, thereby providing support for the traditional economic theory of marriage.
And therefore, marital status is at least a weak indicator of sexual activity and the primary
study proxy of pregnancy. Beyond the research, however, traditional theory is useful
within the context of this study because of the overall conservative nature of the residents
of Athens County. Athens City tends to me more liberal since it contains an academic
institution, but when one steps outside of the city, there is a high percentage of the population that is Republican and holds conservative values, including traditional family values.

Population

Data were analyzed for two groups within the county: 15 to 17 year-olds and 18 to 19 year-olds. Since the program is provided during eighth grade (right before high school), it was best to look at high school age individuals. It is a reasonable assumption that most high school graduates are 18 years of age, and therefore freshmen would be 15. Nineteen year-olds were included simply because that is how the data were organized. Fourteen year-olds (reasonably eighth-graders) were not included because they were lumped into a large group with an age range going down to 10 years. This group would contain both pre- and post-pubescent children and thus was not appropriate for this study. Analyzing one large group that included all ages from fifteen to nineteen is not possible for some data as they were not organized in that way. Additionally, visual inspections of data have shown that these two age groups (15 to 17 and 18 to 19) are vastly different in terms of birth rates. For STD rates and pregnancy rate, data were organized so that fifteen to nineteen-year-olds were included in the same group.

Methodology

Since the data being analyzed were trend, it was necessary to use an interrupted time series design with regression. Time series designs are used as a “means of assessing the impact of a discrete intervention on a social process” (McDowall, McCleary, Meidinger, & Hay, 1980, p. 10). In essence, some kind of experimental change is introduced at a certain period in the time series. The result is “indicated by a
discontinuity in the measurements recorded in the time series” (Campbell & Stanley, 1963, p. 37). A basic design can be diagrammed as such:

\[ X_1 \ X_2 \ X_3 \ X_4 \ \ T \ \ Y_1 \ Y_2 \ Y_3 \ Y_4 \]

In this example, each X represents an observation of the outcome of interest prior to the intervention, which is indicated by T. In this case T is not an intervention or treatment per se, but the implementation point of a program. Each Y represents an observation of the outcome of interest subsequent to program implementation. The purpose of analysis is to determine 1) if there is a significant discontinuity, or difference, in the trend from X to Y, and 2) in what direction this difference occurs.

Time series analysis was appropriate to use for two reasons. First, the program already existed at the time of evaluation. Therefore, random assignment and other true experiment components could not be utilized. Furthermore, denying participation in the program for the sake of achieving an experimental design potentially creates an unethical situation (Marcantonio & Cook, 1994). Secondly, due to the long span of time covered, the collection of primary data was not feasible. Therefore, existing archival data were used. Interrupted time series designs are not suited to primary data, but are suited to secondary data (Marcantonio & Cook, 1994).

Furthermore, time series analysis was a better and more accurate design to utilize compared to simple before-after designs utilizing significance tests. These types of designs only include one pre-implementation measurement and one post-implementation measurement (for example, group means). Therefore, the only result that can be determined is a difference between these two data points. According to Campbell and Stanley (1966), this result is neither adequate nor interpretable. Even if a significant
difference is found between the two points, the nature of this difference is indeterminable. The difference could be explained by a trend, noise, or a transfer function (Mohr, 1988).

As stated by Lewis-Beck (1980), regression is a “technique which involves fitting a line to a scatter of points” in order to determine the relationship between an independent (X) and dependent variable (Y) (p. 9). The current study utilized multiple regression, which is the inclusion of more than one independent variable in the regression equation. A simple multiple regression equation can be represented as:

\[ Y = a + b_1X_1 + b_T T + e \]

In this equation, \( Y \) is the outcome of interest, \( a \) is the intercept or constant (the height of the line), \( b \) is the slope of the variable it represents, \( T \) is the program, \( X \) is any other variable (likely a control), and \( e \) is the error term or the scatter points that do not fit on the regression line. In the current study, \( Y \) is the pregnancy rate; it is also equal to contraction of sexually transmitted diseases; \( X \) equals the marital status of mothers; and \( T \) is simulated by the three year counters described above.

Time series regression models require that certain assumptions are met. First, the dependent variable must be continuous and all independent variables must be either continuous or dichotomous. This condition was met because all variables in this study were continuous, except for the short-term impact dummy variable, which was dichotomous (characterized by either 0 or 1).

Second, multicollinearity must be controlled for and independent variables must be linearly related to dependent variables (Berman, 2007). Multicollinearity occurs when two or more independent variables are so highly correlated with each other that it
becomes impossible to determine the effect of each target variable on the dependent variable (Berman, 2007). This problem was controlled for in two ways. The first was by including a relatively small number of independent variables. Secondly, each of the independent and control variables was represented by one measure and each was conceptually different from the others. It was a reasonable assumption then that none of them were correlated in terms of measuring concepts.

A third important assumption is that the conditional error terms must be randomly distributed. However, time series data typically violate this assumption. This is due to the fact that “adjacent, time-ordered values of observations are highly correlated with each other” (Berman, 2007, p. 246). This is referred to as autocorrelation. This can lead to Type I error, which is a rejection of a true null hypothesis (that no relationship exists). In order to test for autocorrelation in this study, the Durbin-Watson (D-W) test statistic was computed for each model. A D-W test that falls close to 2 indicates that autocorrelation is not present. Generally, a result of 3 and higher or 1 and lower indicates the presence of autocorrelation.
CHAPTER 5: QUANTITATIVE RESULTS

Consistent with the body of research that demonstrates that about two-thirds of comprehensive sexual education programs are effective in achieving their outcomes of interest, it was expected that the local program would likewise be effective. However, visual inspection of trends, coupled with quantitative results, may suggest an outcome inconsistent with expectations.

First, for fifteen to seventeen-year-olds the birth rate was quite stable up until 1999. Between 1999 and 2000, the rate significantly increased, then decreased steadily and appears to be leveling off currently, but at a higher level than before 1999. Likewise for eighteen and nineteen-year-olds, the rate was fairly stable (but higher than the other group) until 1999. At this point, the rate dramatically declined, then leveled off to a point very similar to the other group (Figure 3). The trends for 15 to 17 year-olds and 18 to 19 year-olds are virtually identical for pregnancy rate (Figure 4). For 15 to 19 year-olds, the pregnancy rate is flatter, but appears to have a slight decline. It is important to note that since the 15 to 19 year-old category is a combination of the two smaller categories, the focus will be on 15 to 17 and 18 to 19 year-olds separately.

Secondly, rates of sexually transmitted infections do not indicate a program effect. The rate for Chlamydia has been, overall, in a constant state of increasing since 1995. The rate for gonorrhea, though relatively lower, has been stable up until about 2003 when it started to increase (Figure 5).

The first set of regression analyses performed was for the primary proxy variable of pregnancy rate. This variable had three age categories: 15 to 17, 18 to 19, and 15 to 19. For the first category, the general trend counter found that pregnancy rates for this
age group were increasing over time on average (6.42; Table 3). Both the short-term and long-term program impacts, however, were negative, demonstrating a decline in the pregnancy rate (-2.40 and -6.85 respectively), but neither of these was statistically significant at the p < .15 level. Therefore, either the program was having a slight impact on pregnancy (just not to the point of practicality) or something other than the program had an effect on the pregnancy rates of 15 to 17 year-olds. This latter probability is reasonable considering the R^2 value was only .47.

The coefficient of determination (or R^2) is a measure of association between two variables. It states the proportion of variance in the dependent variable (Y) that is explained by one or more independent variables (X) (Rosnow & Rosenthal, 1993). It is a value that ranges from 0 to 1, with 0 essentially meaning no relationship exists and 1 indicating a perfect relationship. Therefore, an R^2 of .47 perhaps indicates a moderate relationship between the program and the pregnancy rate for this age group. But with more than 50 percent of the variance unexplained, it is likely that something unrelated to the program is having an effect on pregnancy.

For 18 to 19 year-olds, the general trend demonstrated a declining pregnancy rate for this age group (-8.47). This trend was statistically significant (p < .15). The short-term impact shows an even steeper decline, but this was not statistically significant. The long-term impact showed an interesting result. It showed an increasing trend of 8.94 in the pregnancy rate after program implementation at a statistically significant level (p < .10). This suggests that the program itself may be in some way contributing to an

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3 Though it is convention in social science research to utilize an alpha level of .05 to indicate statistical significance, in program evaluation it is common to use an alpha level that is more liberal in order to account for some level of practical significance. The current study will utilize an alpha level of .15. For discussions of this subject, please refer to Oetting and Cole (1978).
increase in pregnancy for 18 to 19 year-olds down the road. This notion is further supported in two ways. First, when comparing the long-term trend with the general trend, it is quite clear that these trends are almost perfect inverses of one another.

Second, the coefficient of determination indicates that a very large proportion of variance in the dependent variable is being explained by the model (R² = .92). This means there is a strong association between the program and the pregnancy rate of older teenagers.

Since the larger category of 15 to 19 year-olds was an amalgamation of the two smaller age groups, both control variable categories were included. Marital status data were only organized by ages 15 to 17 and 18 to 19. There was no 15 to 19 category. For this variable, the general trend counter again showed an average decline in the pregnancy rate over time (-1.37). And similar to the previous age group, the short-term impact showed a sharp decline in pregnancy (-10.61). This result was barely statistically significant (p < .15). Therefore, this impact is likely weak at best. Furthermore, it was not sustained over time, since the long-term trend indicates slight increases in pregnancy (1.82), though not to a significant degree. With an R² of .93, it is reasonable to conclude that the program has a strong association with the trends for this variable.

The next variable that was analyzed was birth rate. Initial analyses for both age categories of this variable indicated some skewness. Visual inspection of histograms showed that results for 15 to 17 year-olds were positively skewed, while for 18 to 19 year-olds they were negatively skewed. Since ordinary least squares regression assumes that the distribution of dependent variables is normal, it was insufficient to run these regressions as is, since this could lead to inaccurate results. Therefore, the natural log transformations of the birth rate were used. Log transformations are used in order to
“normalize” the distribution. For 15 to 17 year-olds, both the general trend and long-term trend showed the same level of decline in the birth rate (-.02). The short-term trend indicated an increase (.58). However, none of the trends were statistically significant. Additionally, only about 22 percent of the variance in the dependent variable was explained by the model (R² = .22), suggesting very little program impact overall. For 18 to 19 year-olds, however, the model yielded different results. The short-term trend steepened the decline in birth rate compared to the general trend to a statistically significant degree (from -.003 to -.74, respectively; p < .05). However, just like with the pregnancy rate, this positive result was not maintained over time (long-term trend = .001, though not significant). The amount of dependent variable variance explained was very high (R² = .93), indicating a strong association between the program and the trends.

Because the logged data were used, the results were less meaningful. Therefore, the statistically significant results were exponentiated in order to revert them back into the “standard,” non-logged form. Meaningful results could then be ascertained. Since the short-term impact for the birth rate for 18 to 19 year-olds was the only statistically significant result for this variable, it was the only one of concern here. The non-logged result showed an approximate decline of 19 cases (per 1,000) in the birth rate for this age group. Not only is this significant statistically, but arguably practically as well.

The final set of dependent variables was for sexually transmitted diseases. Rates for Chlamydia and gonorrhea served as a proxy for sexual activity, but also for contraceptive use. Data for each were categorized only for the whole 15 to 19 year-old age range. Therefore, again, both categories of the control variable were included in the
analysis. Initial visual inspection showed definite skewness and kurtosis for both variables, and so the natural log transformations were used here as well.

For Chlamydia, the general trend indicated a decline in the rate, but both the short and long-term trends indicated increases. However, no results here were statistically significant. Additionally, $R^2 = .85$, meaning the program probably does not have any real effect on Chlamydia rates. Having a pretty high $R^2$ value, coupled with the fact that no part of this model is statistically significant, may suggest the presence of autocorrelation for this variable. Indeed, the D-W test for this model was slightly above 3. However, trying to correct for autocorrelation may have increased the p-value beyond what it was.

For gonorrhea rates, similar to the pregnancy rate for 18 to 19 year-olds, results demonstrate a detrimental impact. The general trend indicates a decline in the rate (-.20). However, both the short and long-term trends demonstrate increases (.04 and .48, respectively). The long-term trend increase is statistically significant at the $p < .10$ level. Since this result was significant, it was also reverted back into its non-logged form, demonstrating an increase of 20 cases in gonorrhea for 15 to 19 year-olds in the long run. The coefficient of determination shows a pretty strong association between the program and the variance in the rate of gonorrhea ($R^2 = .83$). This result is inconsistent with desired program outcomes. This is because it shows rates of gonorrhea increasing over time, which contradicts the goals of promoting health and preventing high risk behavior. Furthermore, it shows that the program may actually be contributing to this trend.

The statistical results presented here are likely understated due to a significant control variable being unavailable.\footnote{For the control variable that was included, results are bifurcated. Marital status of 15 to 17 year-olds, by itself, yields no statistically significant results. However, results for marital status of 18 to 19 year-olds} Research has indicated that alcohol and drug use
play a major role in sexual decision-making, as discussed in Chapter 3. And as the administrator interview indicated, prescription drug abuse among middle school youth has been rising in the last several years. It is a safe assumption then that other types of substance abuse are rising as well among this same group. If data for this variable had been available, the quantitative results probably would have shown a stronger numerical impact of the program. For example, the 11 case per 1,000 decline in the pregnancy rate for 15 to 19 year-olds and the 18 case per 1,000 decline in the birth rate for 18 to 19 year-olds may have become more pronounced. But the results presented here are understated and conservative.

Due to the conservative nature of these results, they are tenuous. And this creates some difficulty in judging the overall effectiveness of the program. There are two apparent problems. The first concerns the long-term impacts that were detrimental and counter to the goals of the program. By adding an alcohol and drug use control variable, these impacts would likely strengthen as well. Therefore, long-term increases in gonorrhea and pregnancy for 18 to 19 year-olds could be higher than indicated in this study.

The second problem concerns causality. In the use of interrupted time series designs, statistical analysis and significance say little about causality. It is difficult to assess whether the program caused the change in the trend or something else. And so the confidence to determine the causality of the program cannot “legitimately come from statistics” (Mohr, 1988, p. 153). It must come from some other method. For this study, indicates declines in gonorrhea and pregnancy for 15 to 19 year-olds, as well as increases in birth for 18 to 19 year-olds. Since 18 and 19 year-olds are more likely to be married, these results might not be surprising, especially in regard to births. They may also suggest that married couples use birth control more, perhaps indicating more responsible family planning.
the local program theory will be compared to a larger, established framework that
describes what effective comprehensive sexual education programs look like. This will
be the focus of the next chapter.
CHAPTER 6: DISCUSSION AND CONCLUSIONS

Given the notion that the local program was consistent with trends in sexual education curricula (i.e. it is comprehensive), and that approximately two-thirds of comprehensive programs are effective, it was expected that the local program would be effective as well. Indeed, in some ways it was effective. The quantitative results show that the program statistically significantly reduced the rate of pregnancy for 15 to 19 year-olds and reduced the rate of births for 18 to 19 year-olds.

By looking over a longer period of time, however, it is clear that these effects are washed out by the long-term impact. The two short-term impacts named just above do not stand the test of time. But more significantly, the program seems to be related to long-term increases in pregnancy for 18 to 19 year-olds, as well as long-term increases in gonorrhea for 15 to 19 year-olds. Additionally, the program has no statistically significant effect at all on 15 to 17 year-olds.

So given two positive short-term effects and two detrimental long-term effects, can this program be considered effective? While policymakers are often concerned simply with short-term effects, it is very important to consider long-term effects. This provides additional information, such as how and what pace the effect occurs (Weiss, 1972). Also, health promotion and risk reduction are by no means short-term endeavors. For example, it is not good enough for a student to use a condom one time right after completion of the curriculum, but then to not use one again after that. Making healthy decisions and utilizing health enhancing knowledge and skills are constant issues in a person’s life. Therefore, the long-term effects should be given greater weight in this examination. Since the short-term effects are washed out, a reasonable conclusion can be
made then that the local program is inconsistent with the majority of comprehensive programs that are effective.

Now it becomes important to answer why. Why is this program ineffective? Why does it fail to achieve its objectives? There are different ways to go about answering this. First, it makes sense to compare the local program theory with the framework of seventeen characteristics of effective programs laid out by Kirby, which are discussed in Chapter 2 and Table 2. Kirby’s framework provides a benchmark, a standard, or a measuring stick, against which curriculum-based comprehensive programs can be assessed. Additionally, since statistical significance does not tell much about causal impact in this case, we need some level of confidence outside of statistics that the program is causing the change (Mohr, 1988). We can be confident that programs adhering to Kirby’s characteristics demonstrate effective impacts.

Also, it is now appropriate to try to explain the major trend shift that occurred in both the pregnancy and birth rates around the year 1999. These shifts were quite significant in magnitude, and they occurred slightly prior to the program implementation date of 2001. This strongly suggests that something happened in the external environment that had a profound effect on these trends. This “event” will be discussed as it may have continued to affect trends beyond 1999 into the years where the current program is operating. History is the primary threat to internal validity for interrupted time series designs, and so it is important to consider in turn (Mohr, 1988).

For the sake of ease and clarity, each one of Kirby’s characteristics will be discussed in turn in relation to the program. Each characteristic falls into one category. The first group includes those characteristics which relate to the initial development of
the curriculum. Next are those characteristics concerning the actual content – goals and objectives and how they are to be achieved through activities and teaching techniques. The final group is about the implementation of the program, including teacher training, student retention, and administrative oversight.

Curriculum Development

One of the first things that must be done to develop an effective curriculum is to include a variety of people and stakeholders who offer different backgrounds in theory and research, especially as they pertain to sexual education. The local sexual education curriculum was established by a group of teachers who had already been teaching the general health course. They made revisions and additions to the curriculum (including sexual education) that they believed to be relevant and appropriate for the area. They utilized the Ohio Model for Health and Physical Education. While it is likely that the teachers involved had expertise in things like curriculum design, cultural knowledge, and activity creation, it is less likely they had much expertise in theories of and research on health behaviors and the risk and protective factors associated with them.

It appears that the local program has at least some level of integrity in regard to this characteristic. However, the researcher was unable to find any written document for the Ohio Model or any authoritative source regarding it. It appears to have been an effort to push for highly comprehensive sexual education within the state. But all information came from independent groups, editorials, and otherwise biased and unreliable sources. The Ohio Model seems to be a phantom policy.

Effective programs must assess the relevant needs and assets of the target group, in this case adolescents. It is likely that the teachers involved with the curriculum
development reviewed some kind of data related to HIV, other STDs, and pregnancy. Indeed the local administrator that was interviewed for this study seemed to have some knowledge level of data from the CDC and the Youth Risk Behavior Survey (YRBS), two major sources of teenage sexuality information. However, according to Kirby, Laris, and Rolleri (2006), effective programs also usually conducted focus groups or interviews with young people and adults who work with young people. This is an appropriate means of collecting relevant information. But such things did not occur for the local program.

Effective programs utilize some kind of logic model, which essentially connects inputs with outputs and outcomes. Kirby, Laris, and Rolleri (2006) note that logic models do not have to be formally developed for a program to be effective. But there has to be some sort of connection between the activities of the program, the mediating factors, and ultimately the goals. The Athens program does not have a formal logic model, but it does have a hierarchical plan, starting with goals at the top, working its way down to the general health education objectives, then on to more specific “growth, development, and wellness” (or sexual education-oriented) objectives, and finishing with a list of suggested life skill activities (Academic Content Manual, 2001). The growth, development, and wellness objectives do address the prevention of STDs and pregnancy since specific activities are aimed at promoting sexual abstinence, as well as discussing contraception. Risk and protective factors also seem to be covered as well.

The problem with the local “logic model” is two-fold, however. First, Kirby, Laris, and Rolleri (2006; subsequently referred to as just “Kirby”) state that effective programs had specific goals focused on prevention of HIV/STDs and pregnancy. The goals for the local curriculum are general health goals, none of which is specific to sexual
education. And secondly, there is no indication that the model is soundly based in social and educational theories – a factor important for success.

The next characteristic provided by Kirby states that curricula need to be consistent with the values and available resources of the community. A strong argument can be made that the local program is inconsistent with the values and resources of the community. Of the 410 Appalachian counties in the country (of which Athens is one out of 29 in Ohio), many if not all tend to be politically and socially conservative. Athens County residents historically are interested in strong social and family values (traditionally speaking), and voted for Republican officials. (Note: Though Athens County recently went to Barack Obama in the presidential election, this can primarily be attributed to a large non-resident college student population that voted (Claussen, 2008)). Therefore, a sexual education program that includes information dissemination and skills building in relation to sexually transmitted diseases, contraceptive use, and pregnancy prevention through non-abstinence means is not likely to sit well in the larger community.

Additionally, Athens is one of the poorest counties in the nation in terms of income. But more than that, Athens also has some of the poorest school districts within the state of Ohio. Indeed, Trimble School District is the poorest in the state (Bryant, 2009). The administrator interview revealed that the health curriculum in the Athens City School District receives no funding. This explains why the administrator receives materials from Planned Parenthood because it comes at no cost. The administrator also tries to find information and materials through self-performed internet searches. Due to this lack of resources, the program is unable to provide textbooks for the students, as well
as other materials that would normally be found in “normal” classrooms, like science and math.

As simple as the next characteristic seems, it can be considered very important. Much like questionnaires, successful programs perform a pilot test prior to full implementation. Pilot testing allows administrators to accurately determine, on a smaller scale, what is working. Those things that are not working can be improved or discarded. The ultimate idea is to tweak the program beforehand until one is confident it will be effective. The local program was not pilot tested prior to implementation.

Curriculum Content

The sixth characteristic states that programs need to have clear, specified health-related goals. The goals and objectives that the local program attempts to achieve are much broader than the ones described by Kirby. According to him, effective programs focus specifically on at least one of three goals: prevention of HIV, prevention of STDs generally, and prevention of unintended pregnancy. But since the sexual education curriculum is part of a larger health course, the goals and objectives that have been set forth are generally the promotion of health and the reduction of risk-taking behavior. This goes beyond just sexual health into the larger realms of physical, psychological, emotional, and social health. The lack of a specific focus on issues of sexual health may be contributing to the mixed effectiveness of the program.

Beyond mere goals, programs must lay out specific behaviors that lead to these goals. The important element of this characteristic is providing a clear and consistent message to students. Effective programs do not simply provide information and let students decide what is right for them. Rather, these programs drive home a clear value
claim. For example, they try to convince students that abstaining from sex, using condoms consistently, and utilizing other contraceptives is the right thing to do. Based on a review of the curriculum and the interview with a local administrator, it is apparent to the researcher that this program does not deliver a clear message about what is “right,” but rather puts the information out there and lets students decide for themselves.

In addition to behaviors, programs must account for the various risk and protective factors that underlie and relate to sexual behaviors. In terms of this characteristic, the local program actually shows some level of consistency. If nothing else, the program definitely seeks to increase the level of appropriate and accurate knowledge that the students have concerning sexual issues. Additionally, it addresses perceived risks, for example, by having students “describe ways to reduce risks related to adolescent health problems” (Academic Content Manual, p. 52). Also, the role of cultural beliefs in influencing health behaviors is described.

But knowledge and skills are not very useful if students lack the confidence and ability to utilize them in everyday behaviors and decision-making. Therefore, effective programs increase the self-efficacy of students. The local program does that as well, as a variety of objectives are geared toward having students demonstrate communication, interpersonal skills, self-expression, and refusal and negotiation skills. By demonstrating these skills, students gain experience practicing, not just merely retaining bits of information. And practice makes perfect.

Another aspect of successful curricula is the creation and maintaining of a safe social atmosphere. Safety here refers less to physical aspects and more to psychological and emotional elements. One of the things that the local administrator mentioned during
the interview was that they changed one aspect of the implementation of the program for the current (2008-2009) school year. Students taking the health class were now being separated by gender. The health teacher would have all boys during one term and all girls during another term. The local administrator had observed that this created a change in the class dynamics. Students were far more likely to be open, interested, and attentive. Overall, the situation was less embarrassing for these students since peers of the opposite sex were not present. Discussing information related to sexuality, puberty, and genitalia can be embarrassing for young teens, especially in the presence of the opposite sex.

Generally, the researcher believes that this change in classroom dynamics created a safer environment for which students could express themselves. However, this change occurred after the years that have been included in the current study. Therefore it is not relevant currently other than to state that the environment under which the program operated previously was not as safe as it could have been. This is demonstrated by the clear increase in students expressing themselves that occurred from the mixed-gender class to the single-gender class. If the program decides to keep this setup, it will be interesting to see if the effects on pregnancy, birth, and STDs change at all in the future.

Programs also need to address protective and risk factors through a variety of activities. The local program did to some extent address protective and risk factors. For example, as mentioned above, students are supposed to learn communication and refusal skills. However, there is no evidence to indicate that students engaged in serious role-playing activities during class. Additionally, the program included discussions about birth control and the consequences of unwanted pregnancy. However, there is no indication that the program sought to improve condom use skills. According to Kirby,
some effective programs actually demonstrate to the students how to properly put on a condom. The local program does not engage in such activities. Another thing the local program does not do is teach students how to talk to their parents and other appropriate adults about sexual issues. Generally, the program lacked multiple activities.

Time is an important element of this characteristic. Programs must be long enough in order to incorporate a variety of activities to address mediating factors and behaviors. The local administrator believed that the Athens program was not long enough. Indeed, the entire health course is only 9 to 10 weeks in length, of which sexual education is only one component. So not only is sexual education not covered extensively enough, but it is included in tandem with other non-sexuality topic areas. This could cause students to easily confuse or forget material related to sexual education, thereby having a negative impact on the program’s effectiveness.

The next characteristic in this category requires that students be actively engaged in the material (through things like projects), not just mere recipients of information. The one specific activity that was required as part of the sexual education portion of the curriculum was a project on human immunodeficiency virus, or HIV. Students were required to perform their own research, develop a report, and deliver a presentation to the rest of the class. This helped the students individually and as a class to personalize the information through an engaging and somewhat interactive approach. Additionally, students had homework and took quizzes related to the material. This may help explain some of the short-term positive effects discussed in the previous chapter. However, given the notion that Kirby lists a long series of interactive, engaging, and personalizing
activities (such as role plays, surveys, competitive games, live skits, etc.), it is likely that the local program could be doing better in this regard.

As mentioned above, effective programs assess the relevant needs and assets of teens. But they must also provide information and a course structure that is relevant to the development, culture, and age of the students. For this characteristic, a simple example will suffice. The local administrator expressed some amount of hesitation in discussing sexual orientation (i.e. homosexuality) in the classroom. She believed that in eighth grade, students are at best just becoming aware of their sexuality and sexual orientation, and so it was not appropriate to go into too much detail about gay and lesbian issues. This seems like a reasonable assessment of the developmental capacity and sexual stage of these students.

The final characteristic for this category states that topic areas must be covered in a logical sequence. The fact that the Athens program teaches sexual education first, followed by alcohol and drugs, and then ties the two concept areas together seems to suggest that topics are covered in a logical order. It is important to cover alcohol and drug use in its own right. But because alcohol and drug use can play a role in sexual decision-making, it makes sense to include this topic area within the larger context of sexual education.

Curriculum Implementation

Effective programs, according to Kirby, have received at least minimal support from an authoritative body. The local health curriculum, with the inclusion of sexual education, did receive authorization from the Athens City Board of Education. Even
though effective programs typically receive some sort of approval, it is important to note again that even ineffective programs often gain official approval.

To take the next step beyond curriculum approval, programs must provide training, support, and oversight to the teachers. Since the local administrator who was interviewed stated that she had come from a different field of teaching, it is clear that not all health teachers in the county are hired already having a background in health education or more especially sex and HIV education. That is not to say, however, that such teachers do not quickly become effective health and sex education teachers. But it may contribute to the overall mixed effectiveness of the program.

Perhaps more importantly, however, the local program lacks administrative supervision and monitoring. Health teachers have a high level of discretion in the classroom. The local administrator attributed this lack of supervision to principals and other administrative officials being overly concerned about meeting requirements for the No Child Left Behind Act of 2001 (NCLB). No Child Left Behind was a national education initiative started by President George W. Bush. Its purpose is to bring all students’ level of knowledge in science and math up to a proficient level by the beginning of the next decade. And reading was recently added to the list. All schools are required to pass standardized exams that are created by the state, and those that fail to do so are put on a corrective action plan. A cut in funding may also result. So it is no surprise then that administrators and teachers in the specified areas are extremely focused on passing these exams. Unfortunately, the less relevant courses of study are sacrificed.

It is further no surprise that health teachers have a high degree of discretion then. Certain healthy levels of discretion can actually be good. In public agencies, employees
need to feel a sense of empowerment in accomplishing public value. Discretion is a major prerequisite for empowerment. However, research has demonstrated that there is a curvilinear relationship between autonomy and effectiveness (Rainey & Steinbauer, 1999). Too much discretion can actually be detrimental to the performance and mission of an organization or program. This could be because the mission or the objectives laid out to achieve it get off track from the original ones. There needs to be some level of discretion, but it is just as important that there be effective relations with oversight authorities, whereby authorities are attentive, supportive, delegative, and demanding (Rainey & Ryu, 2004). Since this relationship is clearly lacking in the local program, it is very likely a factor contributing to the results discussed in Chapter 5.

The next characteristic states that programs need to engage in activities geared toward recruitment and retention, if necessary. Since the health course is required for all students, there was no need to implement such activities. In fact, there was a mechanism designed to do the opposite. Parents had the ability to sign their children out of particular topics discussed during the course. While it is understandable to have such a mechanism (to be ethical and responsive to cultural differences), it does keep some students from being involved in all aspects of the curriculum.

And finally, Kirby states that in order for programs to be effective, they must have reasonable fidelity in implementation for virtually all characteristics. Due to the high level of teacher discretion discussed just above, it is likely that not all activities were executed with reasonable fidelity. Another potential factor is the short length of time that the students are enrolled in the curriculum. Sexual education is only one component of a broader health curriculum that entails a multitude of objectives. It would seem
impractical that all of these objectives could be adequately taught in such a short amount of time.

It is clear from this examination that the local program does not embody many of these characteristics as laid out by Douglas Kirby. And the ones it does embody have not reached their fullest execution. In order for programs to be effective they need to have a majority of these characteristics. Unfortunately, Kirby does not define what a majority is, but it seems quite clear that it means virtually all characteristics. Overall, this examination not only reaffirms the ineffectiveness of the program, but it provides some reasoning as to why this is so. But it is insufficient just to end here. The analysis presented thus far has taken an internal approach. It is also necessary to look at some external events that occurred that may have impacted the pregnancy, birth, and STD trends outside any influence by the program of study (Note: it is possible that these events may also have prevented or disrupted potential or actual program effects). This is especially important to consider given the fact that a major trend shift occurred in 1999 for both birth and pregnancy rates (Figures 3 and 4).

The Athens Wellness Evaluation 1998-1999, published by the Institute for Local Government Administration and Rural Development (ILGARD), notes three significant initiatives that took place in Athens County at that time (Athens Wellness Evaluation, n.d.). The first was a workshop called Asset Building. This workshop was attended by various school and community members. Some teachers went back to their schools and taught their students how to develop their own personal assets. They also presented the information to school staff and school boards. Others, lacking a specific action plan, tried to model and instill assets in their students just on a casual, daily basis.
The second initiative was a media campaign titled “Real Men Don’t Get Teenagers Pregnant.” Since more than half of teen mothers in 1997 stated that the father of their baby was over the age of 20, this campaign was aimed at targeting young adult men. Several items and advertisements were created with this slogan written on them, ranging from highway billboards, newspaper ads, and radio announcements, to bottles, pencils, and key chains. This campaign was never formally evaluated, however.

The third initiative was a theater group comprised of teenagers called “Dramatic Impact.” This was started in one county school district. The group performed improvisation skits that explored sexual issues and sexuality, as well as self-confidence and communication. Other school districts had talked about starting their own theater groups, but the report indicates that this never happened.

Outside of these three major initiatives, there were also a variety of community organizations and school districts receiving grants for various sexuality activities from 1996 to 1998. Such activities included STD seminars, group sessions, brochure dissemination, parent meetings, health fairs, speakers, and the purchasing of materials relevant to teen sexuality and pregnancy (Athens Wellness Activities, n.d.). For all of the positive impact that these activities planned to have, there is little indication that many of them continued beyond the 1998 grant year. This apparent initial burst of momentum seems to have had quickly fizzled out, perhaps causing the major trend shift to occur in 1999 and possibly affecting trends into the future.

There were two grant-funded initiatives that appeared to be more significant, however. First of all, a few community organizations and schools purchased Baby Think It Over dolls. These dolls are electronic and provide simulation of new born infants.
They cry whenever they need to be fed, changed, burped, and so on. The dolls also record certain data about the response time and type of care given by the caretaker (Realityworks, 2009). It is difficult to determine what type of programs these dolls were being used for locally. They have been used for teen pregnancy prevention efforts (whether abstinence-only or comprehensive), but they also have been used for babysitter training and character-building programs.

The second, and most significant, grant-funded program was the purchase of the Sex Can Wait curriculum by the Federal-Hocking School District. They provided this curriculum to sixth and eighth graders. It is an abstinence-only program. Unlike most abstinence programs, this one has demonstrated some level of effectiveness. Denny and Young (2006) found that for middle school students it produced long-term increases in knowledge and decreases in sexual intercourse. However, no short-term gains were noted. For high school students they found weak short-term behavioral benefits, but mostly just short- and long-term attitudinal benefits. The researcher is unsure if this program is still in existence currently, or if it existed at any point beyond 1998.

It is beyond the scope of this paper to determine whether or not (and how) these various initiatives and activities that operate outside the program of study might be affecting trends in teen pregnancies, births, and sexually transmitted diseases. The point in presenting this material was so that the reader may see that there are likely a variety of factors playing a role in these trends. The program of study, overall, has not demonstrated any long-term benefit. It may be ineffective due to infidelity of implementation or an insufficient logic model. But its ineffectiveness may have less to do with internal processes than it does with external ones, such as the activities described
above. Children may be exposed to a variety of conflicting or otherwise inconsistent sets of knowledge, skills, and messages. If there was complete uniformity (or a lack of variety) in the delivery of sexual education, and its message was consistent with the values of the community, we might start to see positive impacts, both in the short-term and across time.

Study Limitations

The results of this study must be considered with some level of reservation. The primary concern is the unit of analysis. First, there is an imbalance between the quantitative and qualitative data. The quantitative data were statistics for the entire county of Athens. But the process analysis was developed from an interview with an administrator from the Athens City School District. Since students attending this district are far more likely to have parents who work for the local university, they tend to be more upwardly mobile in an economic sense. South and Baumer (2000) show that teenagers are more likely to become pregnant premaritally when they reside in low-income, disadvantaged (or not upwardly mobile) communities. Essentially upwardly mobile teenagers generally avoid pregnancy. And so utilizing numeric data that generally includes disadvantaged teenagers with qualitative data that generally includes economically advantaged teenagers presents somewhat of an incompatibility. However, the researcher encountered difficulties in getting non-city school districts to respond to inquiries. Also, since, as mentioned earlier, there is some curricular consistency across districts throughout the county, this incompatibility is not great.

Secondly, by examining county-level data on pregnancy, birth, and sexually transmitted diseases, this study was inclusive of those young people who did not receive
the program of interest. Some young people may not have attended school or transferred into the area after the curriculum was delivered. Or, for the 18 and 19 year-olds, some might be college students who are not residents of Athens. Whatever the case, this study was unable to specifically focus and track only those individuals who have received the program of interest. Gaining access to specific students to survey and observe them would have been virtually impossible given the intense sensitivity of the subject matter, the need for parental and school consent, and possible ethical issues. Even if this scenario could be realized, further problems would arise, including social desirability with answering survey questions and a likely emphasis on attitudes rather than behaviors, which as shown above are the more important indicator of effectiveness.

One other major issue with this study is the lack of a control variable for alcohol and drug use among teenagers in the program (or the county for that matter). Previous research, as well as the interview conducted with the local administrator, demonstrate that alcohol and drug use is highly related to risky sexual behaviors. But since data were unavailable for this variable, it could not be included. Therefore, these two problems mean the quantitative results are conservative.

Despite the quantitative shortcomings, however, this study does gain some strength through qualitative measures. Developing a theory about the program is important for understanding the inner workings. But this study was able to take the program theory a big step forward by fitting it into the framework of 17 characteristics developed by Doug Kirby. Kirby developed his framework through years of quantitative study performed by himself and many others. Given his expertise in this area of research,
examining the current program within the context of his framework brings validity and reliability in the conclusion that this program could be greatly improved.

Current Implications and Future Inquiries

The researcher of the current study has made it clear that the local program is ineffective in accomplishing its health-enhancing goals. Therefore, it is important to consider what might be done in order to improve the achievement of outcomes. With such an apparent lack of fidelity in regard to Kirby’s framework, many recommendations could be made. But the researcher will focus on three primary courses of action. By drawing recommendations from within the context of Kirby, the link between theory and practice will likely be strengthened.

First, the local program should increase the amount of oversight provided by higher-level administrators, such as the principal, superintendent, or school board. As discussed earlier, a curvilinear relationship exists between oversight and organizational effectiveness. Too much street-level discretion (in this case the teacher) is more likely to have a detrimental impact on effectiveness. Discretion can be useful, for example when one must deal with conflicting bureaucratic policies (Ritter, 2008). But in the present case, there seems to be a high level of autonomy exactly because there is a lack of bureaucracy. More specifically, administrative staff members demonstrate a lack of concern, support, and oversight due to a strong concentration on NCLB requirements. This means that the health teacher has no real organizational avenue to express concerns or ask for guidance in handling the classroom or the curriculum. And, more significantly, the teacher lacks any system of rewards and consequences that would otherwise encourage compliance with the curriculum and generate motivation.
By shifting the teacher under the umbrella of authoritative oversight, the program can be pushed up to the top of the bell curve where effectiveness is optimal. This umbrella should provide clear rewards and consequences based on teacher performance. It should also provide a variety of resources – broadly, money, but more specifically materials to enhance learning, like textbooks. Furthermore, simple availability is key. Principals and superintendents should provide guidance, advice, and direction to their teachers.

Second, the local program should initiate more engaging projects related specifically to sexual education. The HIV/AIDS project is certainly beneficial, but seems insufficient. One might argue that doing more projects would take more time, an element which is very much in short supply. But the researcher believes that the very nature of the fact that the sexual education component is short means that every moment should be used to its fullest potential. Activities that are active and engaging will likely generate interest and, if nothing else, keep students on their toes. Activities will easily and readily enhance learning and retention. Indeed, Blumberg (2009) states that involving students in content that applies different types of knowledge generates more learning. What better way than to have students complete different, engaging activities?

To take this point one step further, Ritter (2008) notes that students can be thought of as playing the role of client, a receiver of services. But in this way then students become co-producers of the educational outcome. Teachers are responsible for disseminating information and facilitating activities and assessments. But students are responsible for participating, completing assignments, and learning. Students must hold up their end of the bargain, and therefore they have some level of autonomy – the choice
to learn or not. Now certainly teachers want their students to choose to learn. But with the other possibility looming, how can learning be enhanced? The researcher believes that engaging students in fun and meaningful activities will very much help to direct the autonomy that students have. Allowing them to do their own research, to teach the class, to engage in role play and other consuming activities will bring them, to some extent, a sense of control over what they learn and how they learn it.

The final recommendation that the researcher will make is that the program should firmly link its curricular components to social psychological theories of learning. Bickman (1987) suggests that administrators, when in the stage of developing a program, should consult a social scientist regarding appropriate theories to utilize. That may be a little extreme, and certainly impractical in most cases. But it is a “too-common fact that programs lack explicit theory or that the theory espoused may be implausible” (Bickman, 1987, p. 6). By gaining knowledge of appropriate theories and grounding the program in them would prove beneficial because it creates a causal relationship.

As mentioned above, Franklin and Corcoran (2000) provide several theories that are relevant to sexual education programs. The first is social inoculation theory. This states that people can resist social (peer) pressure to do something by recognizing forms of pressure, increasing motivation to resist, and expanding the self-efficacy to do so (Kirby, Barth, Leland, & Fetro, 1991). Locally, this theory would be appropriate for increasing skill sets, especially in interpersonal interactions. A related theory is cognitive-behavioral theory. This states that people need both cognitive and behavioral skills to resist pressure and wade through interpersonal issues. Specifically, programs should include personalizing activities, skills training, and practice (Kirby, Barth, Leland,
This theory seems particularly relevant in light of the above discussion concerning the idea that the local program seems to lack a sufficient number of engaging activities. Though the study program does include skill building and self-efficacy components, a firm grounding in such a theory as this would likely improve these areas, but especially activities. Other possible theories that are typically utilized in health behavior settings include social cognitive theory, health belief model, and theory of reasoned action (Lopez, Tolley, Grimes, & Chen-Mok, 2009). While the wide availability of useful theories may be overwhelming, it would allow the local program to tailor its theory link to location-specific resources, values, and needs.

Beyond the specific discussion of the local program, future inquiries should examine a few different paths. First, and perhaps most important, Douglas Kirby’s framework of seventeen characteristics needs to be thoroughly examined. He has based his framework on decades of experimental and quasi-experimental research. He also stated that effective curriculum-based comprehensive programs exhibit fidelity with virtually all of the characteristics. But to be completely sure, a program would have to be started from scratch and utilize all of the elements. While this holistic approach is important, it might also be helpful to examine each characteristic separately. Such an examination may bring to light some nuances that would otherwise be lost. For example, just how much fidelity with each element is sufficient to garner effectiveness? Where is optimal effectiveness achieved? Can increased fidelity in one area compensate for shortcomings in another?

Secondly, given that time and resources are abundant, and that Institutional Review Board, school, and parental consent are readily gotten, future studies should and
must gather primary, individual-level data. It would be necessary to gather information prior to program implementation (at least for a particular class of students), immediately after program termination or completion, and then at several intervals into the future. While the program is actively running, classroom observations, in-depth teacher interviews, and student questionnaires would be highly beneficial to perform. Though these things present problems with Hawthorne effects, social desirability, and an emphasis on attitudes over behaviors, if nothing else they would generate a far greater wealth of knowledge and information. A researcher could deeply understand the implementation of the program, the culture of the classroom, and the responses of the students to the material and activities.

Finally, with the shortcomings in the local program being quite apparent, future studies might consider a continual or multi-intervention model. The Athens City School District, for example, does have a sexual education curriculum that is active at the high school level. The eighth-grade curriculum is ineffective in-and-of-itself, but the high school curriculum may demonstrate greater achievement of objectives. Whether this is the case or not, examining the two curricula together will likely yield a more accurate picture of what is going on in terms of pregnancy, birth, and sexually transmitted diseases. It may be that the two programs taken together (one an initiator and the other a refresher or enhancer) will demonstrate positive short- and long-term effects.
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Darroch, J. E., Singh S., & Frost, J. J. (2001). Differences in teenage pregnancy rates among five developed countries: The roles of sexual activity and contraceptive use. *Family Planning Perspectives, 33*(6), 244-250.


Lose the “only;” Bush administration should allow states to augment abstinence education. (2008, January 5). The Columbus Dispatch, p. 8A.


Ritter, M. C. (2008). *A review of street-level bureaucrats and their values from an organizational theory perspective: What are the values, what are their effects, and why do street-level workers have discretion in the first place?* Unpublished manuscript.


### Table 1

**Birth and Pregnancy Rates of Five Developed Countries, Mid-1990s**

<table>
<thead>
<tr>
<th>Country</th>
<th>Ages 15-19</th>
<th></th>
<th>Ages 15-17</th>
<th></th>
<th>Ages 18-19</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Birth Rate</td>
<td>Pregnancy Rate</td>
<td>Birth Rate</td>
<td>Pregnancy Rate</td>
<td>Birth Rate</td>
<td>Pregnancy Rate</td>
</tr>
<tr>
<td>Sweden</td>
<td>7.8</td>
<td>25.0</td>
<td>2.7</td>
<td>16.4</td>
<td>15.5</td>
<td>38.1</td>
</tr>
<tr>
<td>France</td>
<td>10.0</td>
<td>20.2</td>
<td>3.5</td>
<td>10.3</td>
<td>20.0</td>
<td>35.2</td>
</tr>
<tr>
<td>Canada</td>
<td>24.5</td>
<td>45.7</td>
<td>13.6</td>
<td>27.4</td>
<td>40.0</td>
<td>72.2</td>
</tr>
<tr>
<td>Great Britain</td>
<td>28.3</td>
<td>46.7</td>
<td>14.8</td>
<td>28.6</td>
<td>49.8</td>
<td>75.4</td>
</tr>
<tr>
<td>United States</td>
<td>54.4</td>
<td>83.6</td>
<td>33.8</td>
<td>52.8</td>
<td>86.0</td>
<td>130.9</td>
</tr>
</tbody>
</table>

*Note.* Reproduced from Darroch, J. E., Singh S., & Frost, J. J. (2001). Differences in teenage pregnancy rates among five developed countries: The roles of sexual activity and contraceptive use. *Family Planning Perspectives, 33*(6), 244-250.
Figure 1. State of Ohio rates of pregnancy and birth for three age groups.
Figure 2. State of Ohio rates of Chlamydia and gonorrhea both for ages 15 to 19 years.
Table 2

**Seventeen Characteristics of Effective Curriculum-based Comprehensive Programs**

<table>
<thead>
<tr>
<th>Curriculum Development</th>
<th>Curriculum Content</th>
<th>Curriculum Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Involved multiple people with different backgrounds in theory, research, and sex and STD/HIV education to develop the curriculum</td>
<td><strong>Curriculum Goals and Objectives</strong></td>
<td>14) Secured at least minimal support from appropriate authorities, such as departments of health or education, school districts, or community organizations</td>
</tr>
<tr>
<td>2) Assessed relevant needs and assets of target group</td>
<td>6) Focused on clear health goals – the prevention of STD/HIV and/or pregnancy</td>
<td>15) Selected educators with desired characteristics (whenever possible), trained them and provided monitoring, supervision, and support</td>
</tr>
<tr>
<td>3) Used a logic model approach to develop the curriculum that specified the health goals, the behaviors affecting those health goals, the risk and protective factors affecting those behaviors, and the activities addressing those risk and protective factors</td>
<td>7) Focused narrowly on specific behaviors leading to these health goals (e.g., abstinence from sex or using condoms or other contraceptives), gave clear messages about these behaviors, and addressed situations that might lead to them and how to avoid them</td>
<td>16) If needed, implemented activities to recruit and retain youth and overcome barriers to their involvement, e.g., publicized the program, offered food, or obtained consent</td>
</tr>
<tr>
<td>4) Designed activities consistent with community values and available resources (e.g., staff time, staff skills, facility space, and supplies)</td>
<td>8) Addressed multiple sexual psychosocial risk and protective factors affecting sexual behavior (e.g., knowledge, perceived risks, values, attitudes, perceived norms, and self-efficacy)</td>
<td>17) Implemented virtually all activities with reasonable fidelity</td>
</tr>
<tr>
<td>5) Pilot-tested the program</td>
<td><strong>Activities and Teaching Methodologies</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9) Created a safe social environment for youth to participate</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10) Included multiple activities to change each of the targeted risk and protective factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11) Employed instructionally sound teaching methods that actively involved the participants, that helped participants personalize the information, and that were designed to change each group of risk and protective factors</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12) Employed activities, instructional methods, and behavioral messages that were appropriate to the youths’ culture, developmental age, and sexual experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13) Covered topics in a logical sequence</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3. Athens County birth rates for two age groups.
Figure 4. Athens County pregnancy rates for three age groups.
Figure 5. Athens County rates of Chlamydia and gonorrhea both for ages 15 to 19 years.
Table 3

*Unstandardized Regression Coefficients of Models Including Control Variable*

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Pregnancy Rate</th>
<th>Birth Rate&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Chlamydia&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Gonorrhea&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15-17</td>
<td>18-19</td>
<td>15-19&lt;sup&gt;b&lt;/sup&gt;</td>
<td>15-17</td>
</tr>
<tr>
<td>Constant</td>
<td>-31.08</td>
<td>134.74</td>
<td>56.47</td>
<td>2.72</td>
</tr>
<tr>
<td>General Trend Counter</td>
<td>6.42</td>
<td>-8.47&lt;sup&gt;*&lt;/sup&gt;</td>
<td>-1.37</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>(4.00)</td>
<td>(4.12)</td>
<td>(2.12)</td>
<td>(0.05)</td>
</tr>
<tr>
<td>Short-term Impact</td>
<td>-2.4</td>
<td>-16.18</td>
<td>-10.61&lt;sup&gt;*&lt;/sup&gt;</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>(12.04)</td>
<td>(10.49)</td>
<td>(5.49)</td>
<td>(0.43)</td>
</tr>
<tr>
<td>Long-term Impact</td>
<td>-6.85</td>
<td>8.94&lt;sup&gt;**&lt;/sup&gt;</td>
<td>1.82</td>
<td>-0.02</td>
</tr>
<tr>
<td></td>
<td>(4.47)</td>
<td>(3.68)</td>
<td>(1.59)</td>
<td>(0.08)</td>
</tr>
<tr>
<td>Marital Status 15-17</td>
<td>0.12</td>
<td>0.65</td>
<td>-6.72E</td>
<td>0.006</td>
</tr>
<tr>
<td></td>
<td>(0.57)</td>
<td>(0.24)</td>
<td>(0.02)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Marital Status 18-19</td>
<td>0.36</td>
<td>-0.17&lt;sup&gt;*&lt;/sup&gt;</td>
<td>0.02&lt;sup&gt;***&lt;/sup&gt;</td>
<td>-0.03</td>
</tr>
<tr>
<td></td>
<td>(0.51)</td>
<td>(0.36)</td>
<td>(0.007)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>R²</td>
<td>0.47</td>
<td>0.92</td>
<td>0.93</td>
<td>0.22</td>
</tr>
</tbody>
</table>

*Note.* Standard errors reported in parentheses.

<sup>a</sup>Results based on natural log transformations. <sup>b</sup>Both control variables included.

*<sup>p</sup> < .15. **<sup>p</sup> < .100. ***<sup>p</sup> < .05.*
Sec. 510. [42 U.S.C. 710] (a) For the purpose described in subsection (b), the Secretary shall, for fiscal year 1998 and each subsequent fiscal year, allot to each State which has transmitted an application for the fiscal year under section 505(a) an amount equal to the product of—

(1) the amount appropriated in subsection (d) for the fiscal year; and

(2) the percentage determined for the State under section 502(c)(1)(B)(ii).

(b)(1) The purpose of an allotment under subsection (a) to a State is to enable the State to provide abstinence education, and at the option of the State, where appropriate, mentoring, counseling, and adult supervision to promote abstinence from sexual activity, with a focus on those groups which are most likely to bear children out-of-wedlock.

(2) For purposes of this section, 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 context of marriage is the expected standard of human 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 increases vulnerability to sexual advances; and
(H) teaches the importance of attaining self-sufficiency before engaging in sexual activity.

(c)(1) Sections 503, 507, and 508 apply to allotments under subsection (a) to the same extent and in the same manner as such sections apply to allotments under section 502(c).

(2) Sections 505 and 506 apply to allotments under subsection (a) to the extent determined by the Secretary to be appropriate.

(d) For the purpose of allotments under subsection (a), there is appropriated, out of any money in the Treasury not otherwise appropriated, an additional $50,000,000 for each of the fiscal years 1998 through 2003. The appropriation under the preceding sentence for a fiscal year is made on October 1 of the fiscal year.
APPENDIX B: \(^5\) GROWTH, DEVELOPMENT, AND WELLNESS OBJECTIVES FOR GRADE 8

Objectives

3. Recognize the name of common sexually transmitted infections and their modes of transmission.

   **Suggested Life Skill Activities for Objective 3:**

   1) *Create a project related to HIV/AIDS.*
   2) Prepare a group presentation on one sexually transmitted infection other than HIV/AIDS.

6. Demonstrate skills that are important for healthy relationships with the opposite sex.

   **Suggested Life Skill Activities for Objective 6:**

   1) Describe how one can show respect for values held by fellow students.
   2) *Explain why it is important to establish limits on the expression of physical affection ahead of time.*
   3) Demonstrate the development of a common vocabulary related to sexual terms.
   4) *Demonstrate refusal skills to support the choice of sexual abstinence.*
   5) Tell how wellness is affected by choices of healthful behaviors and risk behaviors.
   6) Discuss dating guidelines with parents.
   7) Recognize “lines” and create responses that demonstrate behavior within family guidelines.
   8) *Recognize different methods of birth control.*
   9) *Understand the legal and personal issues of unwanted pregnancy.*

---

\(^5\) Reproduced from the Academic Content Manual. Only Objectives 3 and 6 are included here, as they are the substantive bulk of the sexual education material. Italics added for emphasis.
APPENDIX C: EXAMPLES OF BROCHURES AVAILABLE TO STUDENTS IN THE CLASSROOM

**You Can Say No to Alcohol - and Keep Your Sexual Limits!**
- Respond firmly to offers of alcohol. If someone says, “Come on. Have a beer,” you can say:
  - "No thanks. I don’t drink."
  - "I can’t. I’m driving."
  - "I hate the taste."
  - "I’ve got a big test tomorrow."
  - "Forget it. I don’t want a hangover!"
- Offer fun alternatives to alcohol. At a party, you can dance, talk or play games.
- Hang out with friends who respect your decisions - about alcohol, about sex, about life!

**SEX AND ALCOHOL**
Alcohol and sex are a dangerous combination. Why? Because after a few drinks, things get fuzzy. It becomes harder to set sexual limits. Don’t let alcohol or other drugs take away your control. Check out the tips inside. Learn how to stay safe and stick to your limits.

**STICKING TO YOUR LIMITS**

**Sex, Alcohol and Your Right to Say No**

Saying No to Sex

Written by Tara Leaven.
Designed by Linn Timm. Illustrated by Meg Boada.
Special thanks to our peer reviewers at E.A. Hall Middle School, Santa Cruz High and San Benito City and County Schools.
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Saying no to sex is your right. But alcohol and other drugs can make it hard. Why? Why pregnancy, a sexually transmitted disease or sexual assault? Get the facts about alcohol, sex and sticking to your sexual limits.

You Have Good Reasons for Wanting to Wait

- There are hundreds of reasons people decide to say no to sex. Some of those include:
  - Not being ready to have sex.
  - Not wanting to deal with birth control.
  - Not wanting to risk HIV or other sexually transmitted diseases.
  - Wanting to wait for marriage.
- Think about your reasons. Then take steps to make sure alcohol won’t get in the way of setting your sexual limits.

Drinking Makes It Harder to Say No

- Don’t be fooled by ads that make alcohol look fun and harmless.
- If you drink, you may lose control. Alcohol makes it harder to think clearly, say what you want and react in difficult situations.
- You may have trouble setting sexual limits. Even if you mean to say no, you may not.
- If you say yes to sex when you wanted to say no, you may regret it later.

Drinking Increases Your Risk of Pregnancy and STDs

- The consequences of drunken sex can be serious.
- Studies show that when people drink, they are less likely to practice safer sex or use birth control. This increases the risk of an unplanned pregnancy.
- It also increases your risk of getting a sexually transmitted disease. These include herpes, chlamydia and HIV, the virus that causes AIDS.
- By choosing not to drink, you’ll stay in control of your mind and body. No hangover. No pregnancy scare. No regrets.

Drinking Increases Your Risk of Sexual Violence

- Alcohol makes some people angry and violent. It causes others to pass out or forget entire evenings.
- This is a dangerous combination. Most date rapes occur when one or more of the people have been drinking.
- People have even slipped strong drugs into their victim’s drinks so they can rape them after they pass out.
- You’ll have more power and control over your body if you’re not drinking.

Make It Easier to Stay Safe and Keep Your Limits

- Don’t drink.
- Try to avoid parties or places where alcohol is served.
- Learn how to say no if someone offers you a drink. Take a look at the following tips.
Four Things EVERYONE Needs to Know About HIV

1. Four body fluids — blood, semen, vaginal fluid and breast milk — can transmit HIV. People commonly have contact with another person's body fluids during sex and when sharing needles.
2. To stay safe, you need to avoid contact with the body fluids of an HIV infected person.
3. You may not know if your partner is infected with HIV. You can't tell just by looking. Some people will say they are not infected with HIV when they don't know for sure.
4. Whether you have only one partner or many partners, you will be at risk for HIV unless you always take steps to stay safe.

It's up to you to make sure you don't get infected!

Get Tested

The only way to know for sure if you or your partner have been infected with HIV is to get an HIV test. You can get more information about HIV prevention and testing from your health care provider or local health department, at an HIV or STD clinic, or by calling the CDC National AIDS Hotline toll free: 1-800-342-2437 (English) 1-800-344-7432 (Spanish)

PROTECT YOURSELF

HIV AND SEX
Unsafe Safer Safest

KNOW YOUR RISK

This pamphlet is not a substitute for professional medical care. If you have questions or concerns, please talk with a medical professional.

Written by the staff of the Santa Cruz AIDS Project. Designed by Eve Berenblut. Illustrated by Mary Middle. Special thanks to our peer reviewers.

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### HIV and Sex: Unsafe, Safer, Safest

Sexual contact is one of the most common ways HIV (the virus that causes AIDS) is transmitted. You can protect yourself from HIV infection by taking steps to stay safe. Everyone who has sex needs to know how to protect themselves.

<table>
<thead>
<tr>
<th>Unsafe</th>
<th>Safer</th>
<th>Safest</th>
</tr>
</thead>
<tbody>
<tr>
<td>You risk HIV infection any time you exchange body fluids – blood, semen, vaginal fluids or breast milk – with someone who is HIV positive or whose HIV status you do not know. Unsafe activities include:</td>
<td>Safer sex means avoiding the exchange of body fluids during sexual activities. Safer sex greatly lowers your risk of infection. Staying safer means:</td>
<td>Any sexual activity that does not involve the exchange of blood, semen, vaginal fluid and breast milk is safe. Safe activities include:</td>
</tr>
<tr>
<td>✓ Having vaginal, anal or oral sex without a latex condom or barrier. ✓ Sharing needles for drugs, steroids, vitamins, tattoos or body piercing. You may also be unsafe if: ✓ You do not know how to use a condom. ✓ You mix drugs or alcohol with sex. Even if you mean to practice safer sex, you may not. ✓ You have sex with someone who doesn’t respect your safer sex limits.</td>
<td>✓ Always using a latex condom and water-based lubricant when having vaginal or anal intercourse. ✓ Using a latex condom or latex barrier (such as a dental dam) to keep semen, menstrual blood and vaginal fluids out of your mouth when having oral sex. To stay safer you will need to: ✓ Know how to use a latex condom properly. ✓ Talk to your partner. Ask for and insist on safer sex every time you have sex.</td>
<td>✓ Kissing, hugging and massage. ✓ Masturbation and fantasizing – alone or with a partner. ✓ Role plays that do not involve the exchange of body fluids. Other safe choices include: ✓ Choosing not to have sex at all (abstinence). ✓ Having sex with one uninfected partner who also has sex with only you (monogamy). ✓ Never sharing needles for drugs, steroids, vitamins, tattoos or body piercing.</td>
</tr>
</tbody>
</table>
Plan Fun Alternatives
✓ Find new, romantic ways to show you care! Have a picnic, go to concerts, trade class rings... get creative!
✓ Plan group activities with family and friends.
✓ Relax and enjoy each other without the pressure of sex.

Keep Talking!
✓ If you can talk about abstinence, you can talk about anything!
✓ Remind each other often that you care enough to wait.

SEX, ABSTINENCE AND YOU

Talking About Waiting
Waiting to have sex (abstinence) may be a tough decision. But talking about abstinence with your boyfriend or girlfriend can be even harder. When should you bring it up? What should you say about waiting? The tips in this pamphlet will help you get started.

IT'S OK TO WAIT

SEX, ABSTINENCE AND YOU

Talking Abstinence

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TALKING ABSTINENCE

If you've made the decision to wait to have sex, good for you! And remember, even if you've had sex before, it's never too late to choose abstinence. Either way, talking about waiting can be tough. It's OK to feel scared or shy. (Your partner may too!) These tips will help you get started.

Be Honest About How You Feel
✓ Be clear about not wanting to be sexual.
✓ If you're not sure what to say, write it down first or talk to a close friend.
✓ Tell your partner if you feel pressured or scared.
✓ Think positive. It never hurts to share your feelings.

Don't Wait Until a Romantic Moment
✓ If you go too far, it may be hard to stop and talk.
✓ Pick a time and place that feel safe.
✓ You can talk over the phone or in a public place such as a coffee shop.
✓ Say, "I want to talk about it now, before we go too far."
✓ Discuss times when it will be hard to say no.
How will you avoid these situations?
✓ Agree to stay away from alcohol and drugs. They make it harder to say no.

Talk About the Difference Between Love and Sex
✓ Explain that you can be in love without having sex.
✓ Rushing into sex too soon can ruin a happy relationship.
✓ Waiting gives you time to have fun, share feelings and build trust.

Discuss How Even "Safe Sex" Isn't Always!
✓ Abstinence is the only 100% effective way to avoid pregnancy and sexually transmitted diseases (STDs).
✓ Talk about what would happen if you (or your partner) got pregnant.
✓ What would happen if you got HIV/AIDS?
✓ Think sex is romantic? There's nothing romantic about herpes, chlamydia or genital warts!

Share Your Goals
✓ Where do you want to be in one year? Three years? Explain that you don't want a pregnancy to upset these goals.
✓ What about your parent's goals for you? Talk about how you would feel if they found out you were having sex or having a baby.
✓ Do you think sex before marriage is wrong? Discuss how you would feel if you went against these beliefs.

Talk About the Pressures You Both Feel
✓ Have many of your friends had sex? So what? You're smart enough to make your own decisions.
✓ If your partner acts pushy, explain how upset that makes you. You deserve to have someone who cares more about you than about sex.
✓ What's the rush? You have the rest of your life!
Tips for avoiding alcohol and other drugs.
✓ Stay away from parties or gatherings where drugs and alcohol are available.
✓ Hang out with friends who respect you and your decision.
✓ If you find yourself in a situation where people are drinking or using drugs, leave.
✓ If someone offers you a drink, a joint or a pill, say:
  "I really don't want to. I'm not into that stuff."
  "I can't. I've got to study later on."
  "No thanks. It makes me sick."
  "Getting high would make me feel out of control, and I hate that."
  "I can have a lot more fun without drugs."

Remember:
Saying no to alcohol and other drugs can help you stick with your decision to be sexually abstinent.

It's your body and it's your right to say no to sex. But it isn't always easy. Alcohol and other drugs can make it harder for you to stick to your sexual limits. If you have chosen to say no to sex, saying no to alcohol and other drugs will help you stick with your decision. Read this pamphlet to find out why.

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SAYING NO TO SEX

Sexual Abstinence, Alcohol and Other Drugs

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STICKING WITH YOUR DECISION
SEXUAL ABSTINENCE, ALCOHOL AND OTHER DRUGS

Sexual abstinence means choosing not to have vaginal, anal and oral sex. Many people choose abstinence because it is the most reliable protection against unwanted pregnancy and sexually transmitted diseases. Others choose it for religious, moral or ethical reasons. When you choose sexual abstinence, avoiding alcohol and other drugs can help support your decision.

It's harder to set limits if you're drunk or high.

✓ Alcohol, marijuana, ecstasy and other drugs lower your self control, and may make it harder to stick with your decision to be abstinent.
✓ You may be persuaded to have sex when you don't really want to.
✓ Even if you mean to say no, you may not.
✓ Saying no to alcohol and other drugs helps you stay in control of your feelings and your actions.

Saying no to alcohol and other drugs makes it easier to say no to sex.

✓ Studies show that people who drink or use drugs are more likely to have sex - even when they hadn't planned to.
✓ By choosing not to drink or use drugs, you are choosing to make your own decisions and stick with them.
✓ Don't be fooled into thinking, "Everybody drinks." They don't. And even if they did, that doesn't make it the right choice for you.

Saying no to alcohol and other drugs puts you in control.

✓ If you have strong sexual feelings, drinking or using drugs may make it especially difficult for you to say no to sex.
✓ Alcohol and other drugs affect judgment and change the way people act. You may try to talk yourself or your partner into doing something you wouldn't normally do. If your boyfriend or girlfriend has been drinking too, his or her judgment may also be affected.
✓ When you are sober, you'll make clearer choices and know when to set limits.

Alcohol and other drugs may increase the risk of sexual violence.

✓ Be suspicious of anyone who offers you drugs or wants you to get drunk or high when they know you don't want to.
✓ Some common party or club drugs - like alcohol, Rohypnol (roflus), ketamine (special K) and GHB (liquid ecstasy) - are also used as date rape drugs. People have slipped these drugs into their victim's drink so that they can rape the person when he or she passes out.
✓ Rape is never the victim's fault, even if he or she has been drinking or using drugs. But being sober may help you protect yourself in a dangerous situation.
APPENDIX D: INSTITUTIONAL REVIEW BOARD APPROVAL

The following research study has been approved by the Institutional Review Board at Ohio University for the period listed below. This review was conducted through an expedited review procedure as defined in the federal regulations as Category(ies): 7

Project Title: Evaluation of the Public School System Sexual Education Program in One County in Southeastern Ohio

Researcher(s): Michael Ritter

Faculty Advisor (if applicable): Jay Ryu

Department: Political Science

Rebecca Cale
Institutional Review Board

Approval Date 12/4/09

Expiration Date 12/5/08

This approval is valid until expiration date listed above. If you wish to continue beyond expiration date, you must submit a periodic review application and obtain approval prior to continuation.

Adverse events must be reported to the IRB promptly, within 5 working days of the occurrence.

The approval remains in effect provided the study is conducted exactly as described in your application for review. Any additions or modifications to the project must be approved by the IRB (as an amendment) prior to implementation.