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The Efficacy of Abstinence Only Education

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Running Header: EFFICACY OF ABSTINENCE ONLY EDUCATION

WRIGHT STATE UNIVERSITY

The Efficacy of Abstinence Only Education

Culminating Experience

Jennie Watt McAdams

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I would like to thank my Chair and Co-chair, Christopher Eddy and Sylvia Ellison, for all of their help and hard work. I would also like to thank all my friends and family who have been cheering me on every step of the way.

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Abstract

Chlamydia, Gonorrhea and unplanned teen pregnancies cost the United States billions of dollars every year in various forms of government aid. Why are the numbers of teenage incidences of these health indicators higher than almost every other industrialized nation? Why are the youth in the United States so far behind their peers in sexual health? This paper proposes that one cause is that government funding goes to abstinence only education curriculum which is taught in many schools across the nation. These curricula many times do not teach youth about sexual protection or health and other times contain false information. If there were success rates among the states that have high amounts of abstinence only education funding then a case could be made for these programs, but when the data is gathered and looked at, there is no positive correlation between the amount of money spent on abstinence only education and lowered rates of these sexual health indicators, but rather there is a correlation between abstinence only education funding and high rates of Chlamydia and teenage pregnancy.

The Efficacy of Abstinence Only Education

Abstinence only education is currently being taught in many states, with 30 states actually having abstinence only education mandated in their state laws and policies. With federal funding going to support these programs, it is necessary to determine their efficacy. There are still high rates of Chlamydia, gonorrhea and teen pregnancy among youth ages 15-24 and many of these cases are found in states that use this federal funding. In the year 2009 there were 1,244,180 cases of Chlamydia, 301,174 cases of Gonorrhea and over 400,000 cases of youth pregnancy reported (Centers for Disease Control and Prevention). The current estimate by the CDC shows a rate of 19 million new STIs every year, with an estimated half of these among youths ages 15-19. This data clearly shows that there is a great problem with sexually transmitted diseases and pregnancies among teens ages 15-19 and youth ages 15-24 in our nation, a growing concern for public health professionals. When an analysis was completed of comparison of federal funding, Chlamydia, gonorrhea and pregnancy in these age ranges, it was found that there is a statistically significant correlation between the funding and Chlamydia and pregnancy, thus showing that there is a link between higher funding and higher rates of negative health outcomes. With the research, it is recommended that further tests be done on the rates of STIs and abstinence only education to determine whether the correlation is positive or negative and whether it is doing more harm than good. When considering that other research has shown a positive correlation between comprehensive sexual education and more condom use, less partners and lower rates of certain STIs, it should be an accepted and mandated form of health education, rather than the unproven abstinence only.

Literature Review

Background

The first step in determining how abstinence only education effects youth is defining what it means when funded by the federal government. In 1981, the federal government began the "Adolescent Family Life Act" (Title XX), whose original goal was to teach abstinence to youth in order to lower the rate of unwed teenage mothers. The act was relatively limited until 1996 when a new law was passed: Title V or the Federal Welfare Reform law. This law aimed to lower the rates of all unwed pregnancies and allocated \$50 million federal dollars annually to states that taught abstinence only curriculum. The programs that receive this money must adhere to a strict eight point definition of abstinence only education. Title V gives funding to states that agree to abide by the act's stipulations and matches every four federal dollars with three state funded dollars (Sexuality Information and Education in the United States [SIECUS], 2010). The eight point definition of abstinence only education specified in Title V are as follows:

- Has as its exclusive purpose teaching the social, psychological, and health gains to be realized by abstaining from sexual activity;
- Teaches abstinence from sexual activity outside marriage as the expected standard for all school-age children;
- Teaches that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems;
- Teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of sexual activity;

- Teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;
- Teaches that bearing children out-of-wedlock is likely to have harmful consequences for the child, the child's parents and society;
- Teaches young people how to reject sexual advances and how alcohol and drug use increase vulnerability to sexual advances; and
- Teaches the importance of attaining self-sufficiency before engaging in sexual activity.

-Section 510(b) of Title V of the Social Security Act P.L 104-193

This act left much of what classifies as abstinence only education up to each state. In an effort to create standardization, Congress created the Community Based Abstinence Education program (CBAE), which gives money directly to community based and faith based organizations. Out of the \$176 million that Congress gives to abstinence only education programs, over \$100 million goes to the CBAE (Guttmacher, 2010). While Title V leaves the states in control of which programs and curricula are funded, the CBAE picks and chooses which programs specifically receive the funding, and all must strictly adhere to the fact that abstinence only until marriage is the only safe sex practice discussed (SIECUS, 2010).

Concerning Positive Effects

Now that the definition of abstinence only education for the purpose of this paper is clear, the actual issue and studies may be discussed. Many who support abstinence only education point to and cite one specific study. Titled *Efficacy of a theory based abstinence only intervention over 24 months* and conducted by Fong, Jemmott, and Jemmott in 2010, the results of the study conclude that an abstinence only curriculum reduces the rate of sexual activity in

youths between sixth and seventh grade. The study was a randomized control trial of 662 African American children in this age range in 2000-2001. These children were split into five randomized groups. The first group had an eight hour abstinence only education course that was designed to reduce sexual intercourse, the second had an eight hour course designed only to teach safer sex with condom emphasis, the third and fourth were eight and twelve hour (respectively) comprehensive sexual health classes, and the fifth was an eight hour class that was a general health promotion course discussing health issues not pertaining to sexual behaviors. After the participants completed their assigned course, they had 3, 6, 12, 18 and 24 month follow-up self reporting questionnaires to complete, which asked about their current sexual activities. The chief result from this study was that in the 24 month follow-up questionnaire, 33.5% of the youth in the abstinence only class became or continued to be sexually active versus 48.5% in the other groups. This study demonstrates that for this locus, abstinence only education had an impact on delaying sexual initiation and preventing continuing sexual intercourse after the classes. The abstinence only class did not present any incorrect information regarding condoms or contraceptives, and this particular program, as taught, would not qualify for Federal Title V funding. The study also found that the comprehensive sexual health classes greatly reduced the number of sexual partners compared with the control group and reduced the rate of recent sexual activity. This study is cited repeatedly throughout pro-abstinence only education literature (Jemmott et al., 2010).

Concerning Content

A large factor that causes issue among those opposed to abstinence only education is the content taught. There are incidences of omission and incidences of falsehood among varying programs. The United States House of Representatives Committee on Government Reform –

Minority Staff Special Investigations Division did an investigation in 2004 on the *The Content of Federally Funded Abstinence Only Education Programs*. The report was prepared at the request of Rep. Henry A Waxman in response to the abstinence only education that is now taught to millions of school children across the nation. The report specifically discusses the content found in some of the most popular curricula taught by the grantees of the Special Programs and of Regional and National Significance, a part of the CBAE. The content in these programs is not reviewed by the federal government for accuracy. The main finding of this special report is that over 80% of the curricula investigated contained "false, misleading, or distorted information about reproductive health" (i). The main points that the report found to be of concern were that:

- A. Abstinence only curricula contain false information about the effectiveness of contraceptives
- B. Abstinence only curricula contain false information about the risks of abortion
- C. Abstinence only curricula blur religion and science
- D. Abstinence only curricula treat stereotypes about girls and boys as scientific fact
- E. Abstinence only curricula contain scientific errors.

(Executive summary i-ii, 2004).

The report suggests that the errors could be partly to blame for the lack of effectiveness of the programs in STI prevention and could contribute to youth's inability to make fully informed decisions about sex. To conduct the study, the Special Investigations Division gathered 100 of the program summaries from SPRANS funded programs. They then narrowed the study to 13 curricula that were used by at least five different organizations and reviewed

these for scientific accuracy. The findings were that out of these thirteen, eleven had errors or gross distortions of facts. Many of these curricula were found to cite a now debunked study from 1999 that gave condoms a 69% success rate in preventing the transmission of HIV. Some curricula taught that HIV and other STIs can pass through the latex condom barrier, which is inaccurate. They also found fallacies in the area of pregnancy prevention. One curriculum states that touching another person's genitalia could lead to pregnancy, and this particular lesson even states that "remaining a virgin all but eliminates the possibility of becoming pregnant" (Executive Summary i-ii). Numerous incidences were found in these curricula of stereotyping boys and girls. Some claimed that sexual activity increases or even causes many emotional issues such as loneliness, depression and jealousy, without the support of scientific data. The report concludes that "over two thirds of abstinence only education programs funded by the largest federal abstinence initiative are using curriculum with multiple scientific and medical inaccuracies" (Content of Federally Funded Abstinence Only Education Programs, 2004).

When discussing the protection condoms provide, it has been found that some abstinence only programs continue to propagate myths and unrealities about their effectiveness. The efficacy of condoms has been reviewed in 2000 by the US Public Health Service and a gathered group of scientists. It was shown that when condoms are used consistently and correctly, they offer protection against various STIs and pregnancy. Using this study, Lin and Santelli in 2008 published a report on the fallacies found in abstinence only curriculum in *The Accuracy of Condom Information in Three Selected Abstinence only Education Curricula*. The report looks at three selected abstinence only curricula to see if the condom data was medically accurate: one aimed at middle school students, one aimed at high school students, and one who's demographic was sixth grade to high school. The three curricula were selected based on a request to the

authors made by the American Civil Liberties Union. There were three main types of inaccuracies found in these curricula: out of date information that has been disproven by current research, selective reporting, and data that has not come from a peer reviewed source. While the National Institute of Allergy and Infectious Disease gives condoms a combined slippage and breakage rate of 1.6-3.4%, the abstinence only curricula surveyed had rates ranging from 0.6-44.5%, with the lower rate being "specific to female prostitutes" (Lin, 2008). The curricula are found to consistently selectively report the higher rates in condom failure, at times using different subgroup category rates instead of rates found in the general population. While scientific reports show that condoms are impermeable to cells regardless of their size, some programs have compared the size of a sperm cell to the size of an HIV cell and implicated that the smaller HIV cell can pass through a condom much easier than a sperm cell. The final findings of the study are that these three federally funded abstinence only education programs give the message to adolescents that condoms fail to prevent both pregnancy and STIs by using a combination of outdated reports, selective reporting, and faulty comparisons and reasoning. The authors conclude that given the fact that two-thirds of American high school students are sexually active, correct and accurate contraceptive information needs to be given to them (Lin & Santelli, 2008).

Concerning Experiences

Hand in hand with research is what the teens being taught think. They are the ones who will be involved in the sexual scenarios and they are the ones who will be living the lessons taught. At times, it is easy to forget that teenagers are not just a part of a study or merely a statistic, but rather people who have an opinion and tendencies to how they will learn. Many studies have been trying to evaluate just that, what it is that those taking sexual education classes

think of them and how they would learn the lessons best. In the article *Adolescent pregnancy: Youth Perspectives on Prevention* by Mary Aquilino, 57 teenagers between the ages of 14-19 met with the author in groups of seven twice in a two week period to discuss effective pregnancy prevention strategies. Of these 57 youths, 25 had previous sexual intercourse, and 4 had been involved in a pregnancy, either as mother or father. The method for obtaining data in this study was a focus group using the Focus Group Discussion Guidelines. The three main topics discussed in these groups were: feelings about pregnancy, pregnancy prevention and prevention programs. The teens felt that, in terms of pregnancy prevention programs, anatomy and physiology should be given to students in the late elementary grades and then once in junior high. Contraception information should be presented and subsequently repeated throughout their high school years. They also felt that effective communication should be taught, along with the emotional aspects of sexuality and sexual health. The primary message that youths felt should be taught was responsible decision making regarding sex, not abstinence only. They felt that abstinence only was a good message for grade school, but then once children entered high school, appropriate contraceptive use needed to be taught. They believed that beginning to teach sexual education to younger children gave them the benefit of getting used to discussing sex and ease them into frank and open communication. The overall implications and conclusions of the paper were that youths felt that they would benefit from peer counseling and open discussions about sex and contraception much more than by the abstinence only method, which they felt would be of greater benefit younger to children. The paper shows that teens do care greatly about their sexual health and realize that they need proper education and approachable authority figures (Aquilino, 2007).

How teens get their information regarding sex is as important as how they feel they should be taught. Factors that influence adolescents in their decision to have sex or to abstain from sexual intercourse are discussed in the article *Let us talk about it: Safe adolescent sexual decision making* published by Weiss in 2007. The purpose of the study is to determine where teenagers receive information about sex and, more importantly, where they receive the messages that they choose to listen to. The study points out the two conflicting messages teens often receive: the mainstream media where sex is pushed at every opportunity and then the abstinence only message. The paper suggests that the abstinence only education method prohibits open dialog about sex and sexual health between teenagers and adults and leads them to be ill prepared in the long term. Weiss (2007) adds that while abstinence is a large part of what should be taught to children, many of the abstinence programs provide misleading and at times false information to adolescents, thus rendering them ineffectual at making informed decisions about their sexual health. While abstinence programs may lead to increased knowledge of harmful consequences of sex such as STIs and pregnancy, they have not been shown to have an impact on the communication and social skills necessary for dealing with the spectrum of sexual initiation. They do not teach refusal skills or how to effectively communicate with adults. The paper proposes that the best way to promote safe sexual habits is by open and thorough communication with teens and a willingness to listen and become involved (Weiss, 2007).

One must not rule out the effects of abstinence only until marriage education on those who do not have the power to get married. The article *Queer Youth Experience with Abstinence Only Until Marriage Sexuality Education: "I can't get married so where does that leave me?"* by Christopher Fisher published in 2009 studies homosexual or bisexual adolescents and their sexual education. The study is qualitative and includes eight interviews from gay and bisexual

males who had abstinence only education in school. One large difficulty presented to the lesbian, gay and bisexual community is that if they receive abstinence only until marriage education and they are not legally allowed to marry in many states, when and how are they supposed to become sexually active? Another problem addressed is that in many of the abstinence only education curriculum, if LGBT (lesbian, gay, bisexual or transgender) individuals are mentioned at all, it is usually in the context of being abnormally affected by AIDS or HIV rather than discussing sexual health and how to avoid diseases. All participants agreed that the main focus of the curriculum was heterosexual relationships and how babies were made, with no mention of preventing STIs in a same sex relationship. The students interviewed also discussed feelings of isolation and confusion on what they were supposed to do and expressed that their abstinence only education did not prepare them for the reality of sexual intercourse as a LBGT individual. Many of the participants felt depressed and suicidal, with no help in their sexual orientation to understand who they were. The participants also discussed the incorrect information they received in this curriculum, such as the inefficacy of condoms (Fisher, 2009).

Outcomes and Impacts

Regardless of political ideology, outcomes are what need to be studied and the majority of studies done show no positive impact on sexual health outcomes or, at times, negative impact when considering abstinence only education. Facts and data can show more than opinion and in the study *Impacts of Abstinence Education of Teen Sexual Activity, Risk of Pregnancy, and Risk of Sexually Transmitted Diseases* published by Trenholm et al. in 2008 four abstinence only education programs were analyzed for impact. Data was collected in 2005-2006 using an experimental design where 2000 teenagers were randomly assigned to either one of four

abstinence only education programs or a control group that had no education in that area. The study aimed to see the outcomes of the students' number of partners, knowledge, risk of STI and pregnancy and onset of sexual initiation. The results from these studies, using regression and other analytic methods, showed that there is not a statistically significant impact on adolescent sexual abstinence from these programs. Those in both control and experimental groups were not found to differ in their number of sexual partners nor in their sexual initiation age, with an identical mean age of initiation at 14.9 years. The use of protection was consistent among both program and control youth, with the numbers indicating that 47% of the youth surveyed in both the control and program groups who were sexually active within the last twelve months of the study did not use condoms. There was no statistically significant difference between the groups on rates of pregnancy. It was found that the youth in the abstinence only programs were more likely to say that condoms were ineffective in the prevention of STIs over their control group counterparts. The study found no data to support claims that abstinence only education prevents or reduces adolescent sexual activity. Both program and control groups had roughly the same rate of abstinence, age of initiation and number of sexual partners (Trenholm et al., 2008).

With more programs studied, more results can be drawn as to the effects of abstinence only education. This was done in one of the largest evaluations on teen sexuality and sexuality education and titled the *National Campaign to Prevent Teen and Unplanned Pregnancy; Emerging Answers 2007*. Comprising 10 chapters and hundreds of studies, this paper includes numerous studies that point to the inefficacy of abstinence only education programs. In chapter six, studies of 56 curriculum based sex and STI/HIV education programs are discussed, 7 of which were abstinence only courses. When analyzed, 33 used an experimental design with random assignment, and the other 23 used a quasi experimental design. Over 600 tests for

statistical significance were performed to ensure accuracy and the elimination of chance skewing the results. The study looked into results of the programs such as age of sexual initiation, amount of sexual intercourse, number of partners, use of contraceptives and condoms, and risk taking. The two main findings were that all programs studied reduced one or more of these behaviors and that they did not increase sexual behavior when compared with control groups. When looking at the 7 studies on abstinence only curricula, two of these are noteworthy as they take into account multiple programs, use well laid out experimental designs, and track their respondents for years. No abstinence only program studied had any impact on age of initiation into sexual intercourse, number of partners, lack of sexual activity in the last twelve months of the survey, use of condoms or contraceptives, frequency of sex, pregnancy, birth or STI rates. (Emerging Answers, chapter 6, pp102-126).

Many studies have found that there is no direct link between abstinence only education and lowered rates of STIs or pregnancy in the targeted teen population. In 2007, Kohler, Manhart and Lafferty conducted a study to determine if there is any difference in sexual outcomes of adolescents between abstinence only education and comprehensive sex education. In their study, *Abstinence only and Comprehensive Sex Education and the Initiation of Sexual Activity and Teen Pregnancy*, the authors collected data from the National Survey of Family Growth, which is conducted by the National Center for Health Statistics. The information collected included demographics, knowledge and beliefs regarding family planning issues, and self reported sexual behavior and STIs. For the survey, 1,150 girls and 1,121 boys ages 15-19 responded. The samples of adolescents were all unmarried heterosexuals who had either received no formal sex education, abstinence only sex education or comprehensive sex education. The results found that abstinence only education was not associated with a participant

ever having engaged in vaginal intercourse. Comprehensive sex education was slightly associated with lowered rates of vaginal intercourse. Compared with those who received no sexual education, it was found that abstinence only education was not associated with a reduced rate of teen pregnancy, while those who reported they had received comprehensive sex education were significantly less likely to become pregnant as a teen. When comparing abstinence only education with comprehensive education in this case, comprehensive education was associated with a 50% lowered rate of teenage pregnancy. After adjusting for key demographics, neither abstinence nor comprehensive sexual education were associated with STI risk when they were compared to no sexual education. The conclusion of the paper found that there is no significant effect of the abstinence only education programs studied on reducing teen pregnancy, STIs, or delaying first sexual experience. Comprehensive sex education was only found to be significantly associated with lower rates of teen pregnancy (Kohler et al., 2008).

Summary

Given the literature that has been published in scientific journals, psychological journals, political and ethical journals, there is much data and studies done on abstinence only education. While some discuss its efficacy, others discuss content and still others discuss the personal issues that those who took these classes have had, the majority have proven or are trying to prove that abstinence only education is not the best route to take when teaching teens sexual health. There have been few studies done that have shown a positive influence on age of sexual initiation and abstinence only education, but these studies have used programs that would not qualify for federal funding and therefore have not been counted in the breakdown on the paper. Taking from current peer reviewed studies and articles, it is theorized that abstinence only education

does not lower rates of STIs or teen pregnancy and, with the lack of teaching on condom efficacy, potentially raises these rates.

Methods and Data

For the purposes of this paper, the data was collected in order to compare the rates of Chlamydia, Gonorrhea and pregnancy in adolescents by state with their corresponding amount of federally allocated abstinence only education funding. The numbers of Chlamydia and Gonorrhea in adolescents 15-24 are from 2008 from the CDC data archives, and then the rate per youth was calculated using 2008 census data of 15-24 year olds from the American Census web site. It must be noted that the CDC did not include disease data from Kansas nor did it breakdown into teenage increments of 13-19. The data concerning pregnancy is gathered from the 2005 Guttmacher Institute's report on US Teenage Pregnancies, Births and Abortions and surveys women aged 15-19 including abortions and miscarriages. The federal funding per state of abstinence only education is from the fiscal year 2008 and was retrieved from SIECUS. It includes Title V, CBAE and AFLA funding. For the data and graphs analyzed in the paper, the total number of adolescent Chlamydia and Gonorrhea cases were taken by state. The incidence per youth was taken using the estimated number of youths from the census database. The federal funding was similarly broken down into dollars spent per youth using the same figure from the census in order to determine if there was a correlation between dollars spent per youth and incidence of the two aforementioned sexually transmitted diseases and pregnancy. The number per youth of Chlamydia, gonorrhea and pregnancy were multiplied by 1000 to increase visibility.

Figure A takes the seven states who have taken no federal abstinence only education funding and compares them with the seven states who have taken the most money. In virtually every indicator, the states who took no money have lower rates, with the exception of Delaware.

It must be noted that the demographics of the states in key factors that are not discussed in this paper, such as income, family intact status, race, religion and access to health care.

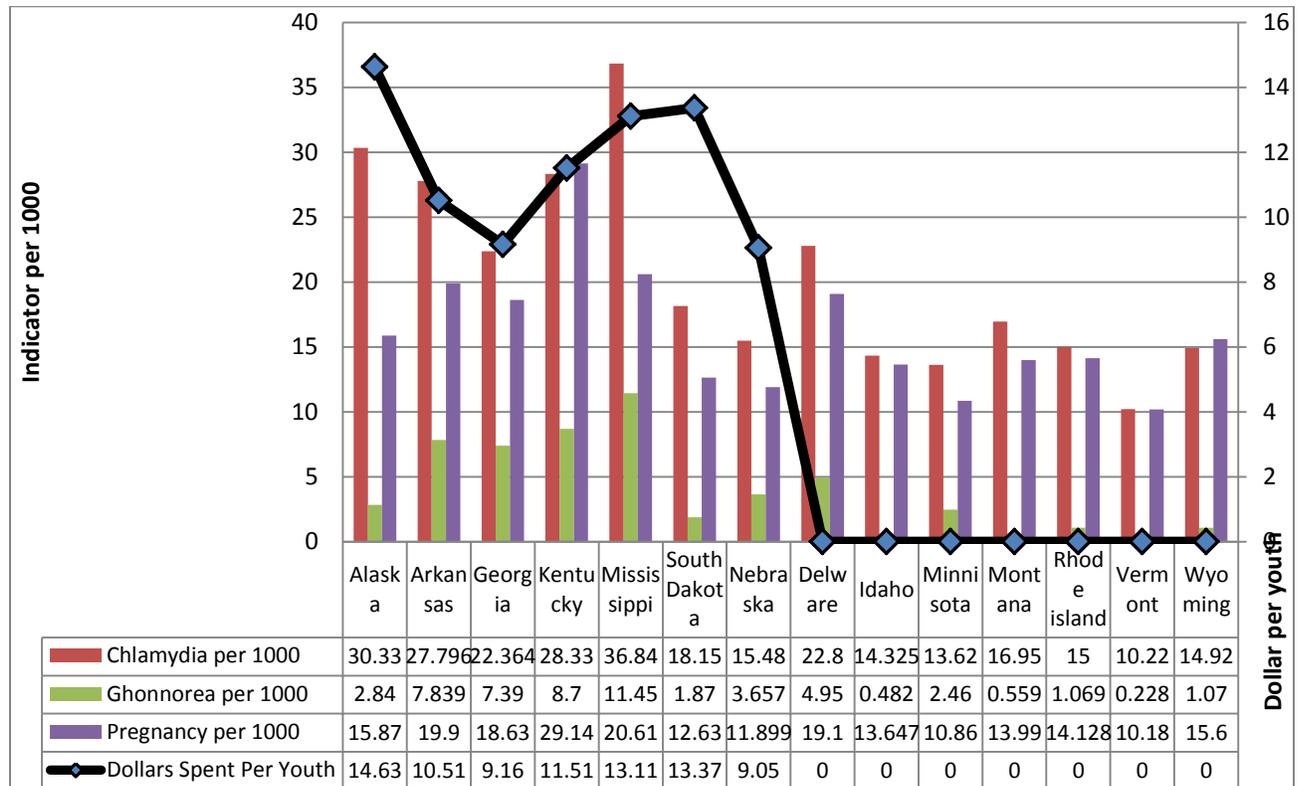


Figure A. Comparison of incidence and dollar per youth in 14 states based on federal funds taken for abstinence only education

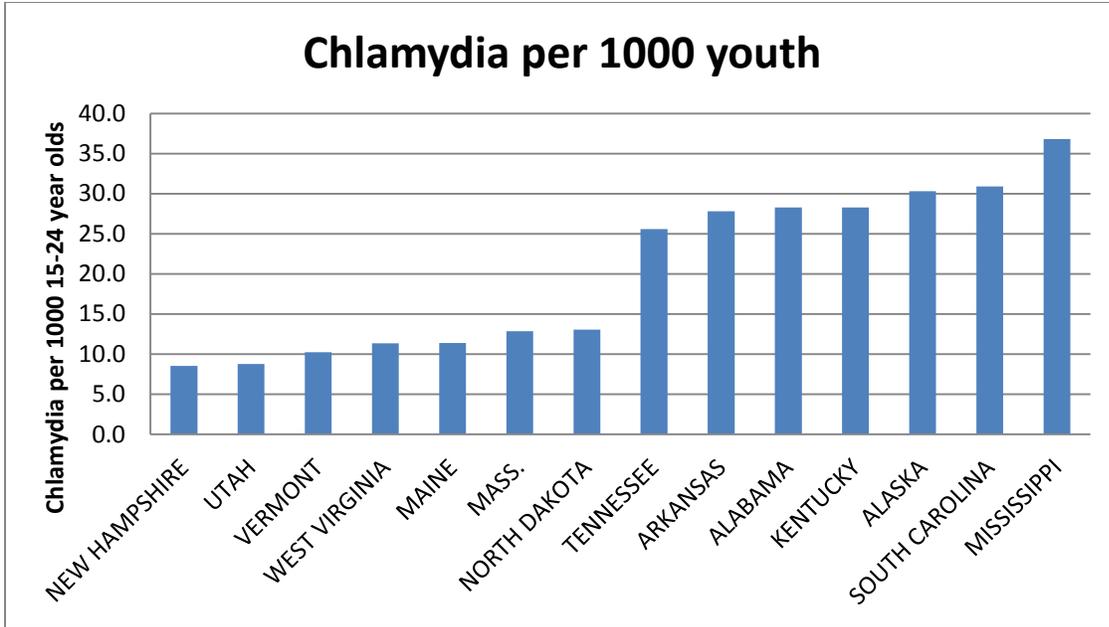


Figure B. 7 highest and 7 lowest states for Chlamydia per 1000 youth

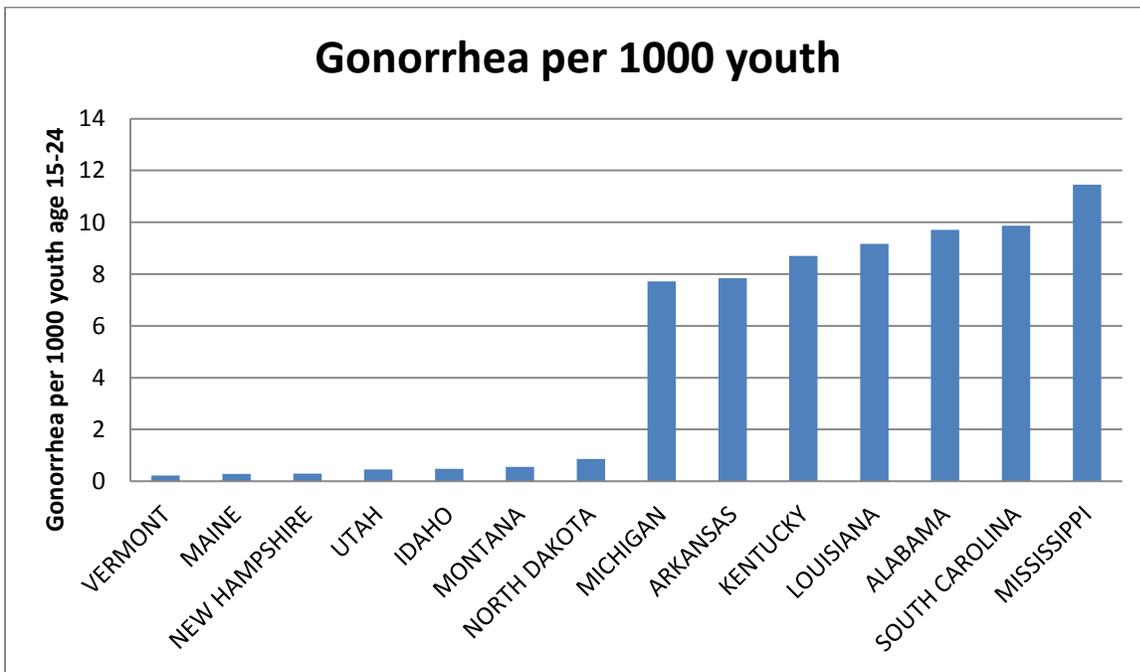


Figure C. 7 highest and 7 lowest states for Gonorrhea per 1000 youth

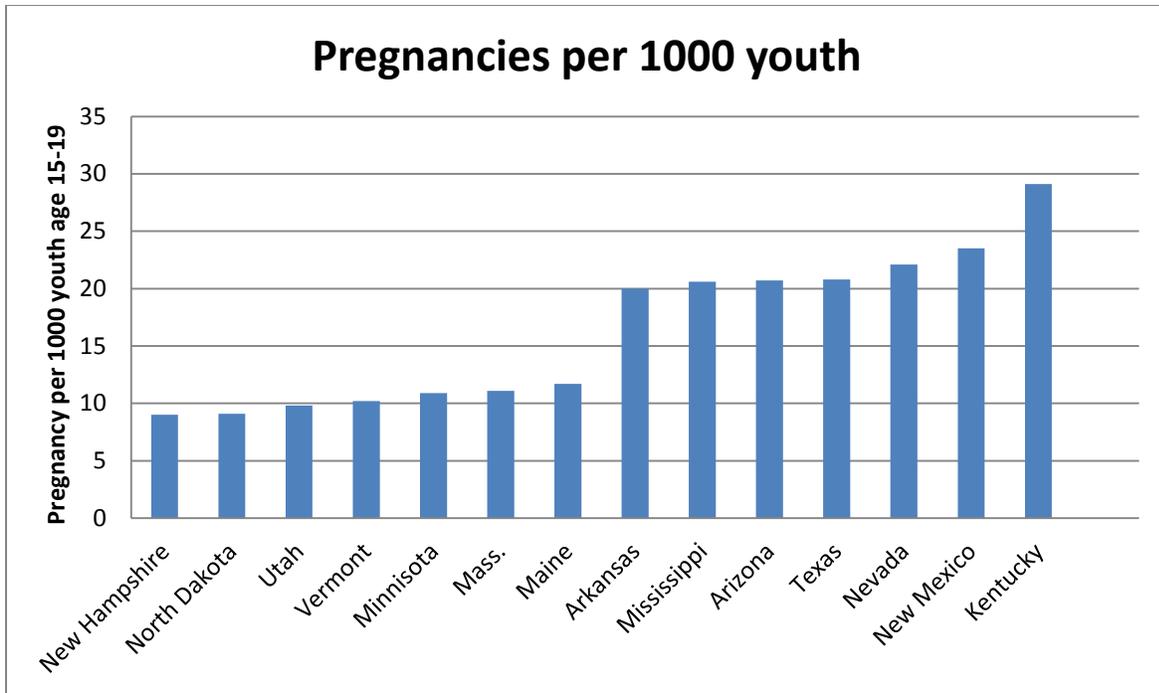


Figure D. 7 highest and 7 lowest states for teen pregnancy per 1000 youth

When comparing the high and low rates of the aforementioned indicators, the three states that are found in the upper echelon in all 3 areas are; Mississippi, Arkansas and Kentucky. These three states are also among the most highly funded states for abstinence only education funding. Vermont is a common state in all three indicators on the lowest end as well as in the states that accepted no funding. It is postulated that there is a correlation between amount of funding and amount of these diseases and pregnancy. This does not conclusively prove that higher funding results in higher markers; from the data it is inconclusive as to whether the higher funding caused the higher rates. Before comparing the data methodically, the figures show visibly a correlation between the heavier funded states and their STI and teen pregnancy rates.

A contingency table was created comparing each of the factors to abstinence only education funding, after assigning each state a “1” in the lower fiftieth percentiles for funding or a “2” for the upper fiftieth percentile for funding. These were counted, compared and added and

a chi square and Fishers exact test were run to see if there is any relationship between the factors of funding and health outcomes. The results are as follows in Table 1.

Table 1

				Two Tailed Chi Square	Fisher's Exact
Chlamydia		N=26	N=23		
		Low Funding	High Funding		
	Low Rate	18	7	p=0.0153	p=0.0101
	High Rate	8	16		
Gonorrhea		N=26	N=23		
		Low Funding	High Funding	p=0.2007	p=0.1564
	Low Rate	16	9		
	High Rate	10	14		
Pregnancy		N=25	N=25		
		Low Funding	High Funding		
	Low Rate	18	6	p=0.0018	p=0.0016
	High Rate	7	19		

In regards to Chlamydia, the null hypothesis, which states that the two factors have no relationship to one another, is rejected, as the p value is less than .05, at 0.0153. This is a statistically significant number and shows that there is only a .1% chance that these two factors are not related. While it cannot be said how one effects another through this test, the chance that one factor does not have a relationship with the other is incredibly slim. With a p value of 0.2007, the relationship between high and low amounts of Gonorrhea and high and low funding is not considered to be statistically significant, as there is a 20% chance that these two variables are interrelated, which is not scientifically acceptable in peer reviewed sources. With a p value of 0.0018 translating to a .018% chance that federal funding and youth pregnancy are not related, there is a high degree of scientific significance that funding and youth pregnancy are related.

For the purposes of this paper, raw data culled from the CDC, the Guttmiecher Institute, SEICUS and the Census Bureau were input and analyzed in a two tail chi square test as well as a Fishers Exact test to see if there is any effect between money spent on abstinence only education programs and sexual health outcomes in youth. In completing the chi square test for significance, the data shows that with all indicators except Gonorrhea, there is a significant relationship between federal funding for abstinence only education and the amount of the aforementioned Chlamydia and teen pregnancy. Without longer study frames, we cannot say which influences which. However, there is a definite correlation between funding and Chlamydia and pregnancy in youth and teens.

Conclusion and Recommendations

Using the data and tests that I completed, it can be shown that there is a correlation and relationship between abstinence only education funding and rates of Chlamydia and pregnancy among youth and teens. There was not a statistically significant finding with gonorrhea and this is theorized to be because of symptoms. Chlamydia is a silent threat, with few visible symptoms and is typically not found unless through a routine exam, thereby allowing it to quickly spread through a sexually active and unprotected community. Gonorrhea, on the other hand, has highly visible symptoms that typically begin to appear within days after the infection. This leads to a quicker treatment and containment of the disease and so it is not as easily or quickly spread. Until further research is done, it cannot be proven which is the dependent and which is the independent variable in regards to abstinence only education and rates of Chlamydia and pregnancy among their respective age groups. However, there are definitive significant findings that warrant more studies on the causality. In both researching this topic and completing the data analysis it can be shown that there is little to no proof that abstinence only education lowers any

health risks or STIs among youth. Rather, while we do not know the causality of the findings, we know that higher funding is associated with higher rates of disease and pregnancy. This should cause great concern not only for the public health community but also for the community as a whole. It can also be shown that three states with the highest funded abstinence only education programs have the higher rates of Chlamydia, gonorrhea and teen pregnancy per dollar spent. Whether this is because of the education itself or whether these states requested more funding as a result of these issues, it cannot be proven with this research. As I have shown that there is a correlation between Chlamydia and pregnancy and higher abstinence only education funding, I recommend doing away with these programs and trying new and proven methods to prevent disease and pregnancy in teens. There is no data conclusively proving that federal funding lowers these indicators, and without further research as to which factor influences the other, the millions of dollars spent could be going to ineffective programs. There are currently a plethora of studies indicating that these programs are ineffectual and also findings that suggest that the majority of Americans support comprehensive sex education. However, because of the emotional nature of abstinence only education as well as school board legislation and ties to politics, religious beliefs and ethics, scientific proof that it does not work does not seem to be enough. The argument against comprehensive education is not that the information given is incorrect, but because it can be seen as pushing children toward sex, instead of educating them. Religious and political moors and norms are being taught in parochial schools across the country, because, as some schools believe, any kind of sexual health class is better than none at all, though some teach it as a result of state law. Comprehensive sex education, on the other hand, includes abstinence and teaches that abstinence is the best and only way to totally prevent disease and unwanted pregnancy. It does, however, acknowledge that complete abstinence in all

youth not a factual event, with the average age of first intercourse at 17.15 years and average age of marriage at 26.5, and so aims at preventing what diseases there are through knowledge and understanding of all options available to youth.

It is the role of public health to educate the population and teach them preventative measures to keep healthy on their own, regardless of religious or political background. With diseases like Chlamydia that spread quickly through a community due to little or no symptoms in the early stages and with our federal budget stretched nearly to the breaking point already, there is an overwhelming need for public health professionals to step in and enforce the goals outlined in *Healthy People 2020*. If public health professionals are to take their positions and goals seriously, then they need to work harder at educating and informing today's youth. They must have every available resource so they may prevent the spread of diseases and unintended pregnancies and take control of their own sexual health and well being. As a result of this study, it is recommended that schools begin teaching comprehensive sexual education as a way to increase teen awareness of diseases and prevention measures. It is also highly recommended to public health professionals to conduct more studies and research into abstinence only education to prove definitely to the community and federal government that there is no place for it in a health education classroom, as there are no findings that support that it can retard the growing rate of STIs or pregnancies. There also must be more emphasis for parents or caretakers to take responsibility of teaching their children or being knowledgeable about what their children are being taught. Without active involvement of parents and community leaders, curricula will remain at the status quo and not all teens will be prepared properly for sexual initiation. They could, in fact, be lacking knowledge that could potentially save their lives.

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Appendix A: List of Public Health Competencies Met

Specific Competencies
Domain #1: Analytic Assessment Skill
Defines a problems
Determines appropriate uses and limitations of both quantitative and qualitative data
Selects and defines variables relevant to defined public health problems
Applies ethical principles to the collection, maintenance, use, and dissemination of data and information
Makes relevant inferences from quantitative and qualitative data
Applies data collection processes, information technology applications, and computer systems storage/retrieval strategies
Recognizes how the data illuminates ethical, political, scientific, economic, and overall public health issues
Domain #2: Policy Development/Program Planning Skills
Collects, summarizes, and interprets information relevant to an issue
Articulates the health, fiscal, administrative, legal, social, and political implications of each policy option
Utilizes current techniques in decision analysis and health planning
Decides on the appropriate course of action
Domain #3: Communication Skills
Communicates effectively both in writing and orally, or in other ways
Solicits input from individuals and organizations
Advocates for public health programs and resources
Uses the media, advanced technologies, and community networks to communicate information
Effectively presents accurate demographic, statistical, programmatic, and scientific information for professional and lay audiences
Attitudes
Listens to others in an unbiased manner, respects points of view of others, and promotes the expression of diverse opinions and perspectives
Domain #4: Cultural Competency Skills
Utilizes appropriate methods for interacting sensitively, effectively, and professionally with persons from diverse cultural, socioeconomic, educational, racial, ethnic and professional backgrounds, and persons of all ages and lifestyle preferences
Attitudes
Understands the dynamic forces contributing to cultural diversity
Understands the importance of a diverse public health workforce
Domain #5: Community Dimensions of Practice Skills
Identifies how public and private organizations operate within a community
Identifies community assets and available resources

Domain #6: Basic Public Health Sciences Skills
Defines, assesses, and understands the health status of populations, determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services
Understands the historical development, structure, and interaction of public health and health care systems
Identifies and applies basic research methods used in public health
Applies the basic public health sciences including behavioral and social sciences, biostatistics, epidemiology, environmental public health, and prevention of chronic and infectious diseases and injuries
Identifies and retrieves current relevant scientific evidence
Identifies the limitations of research and the importance of observations and interrelationships
Attitudes
Develops a lifelong commitment to rigorous critical thinking
Domain #7: Financial Planning and Management Skills
Applies basic human relations skills to the management of organizations, motivation of personnel, and resolution of conflicts
Manages information systems for collection, retrieval, and use of data for decision-making
Domain #8: Leadership and Systems Thinking Skills
Helps create key values and shared vision and uses these principles to guide action
Identifies internal and external issues that may impact delivery of essential public health services (i.e. strategic planning)
Facilitates collaboration with internal and external groups to ensure participation of key stakeholders
Promotes team and organizational learning