



The Effects of Abstinence-Only Sexual Education on Teen Health and Behavioral Outcomes

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Introduction

Sexual education has become a polarizing topic in American politics. It is an issue that represents the cultural differences regarding sex in American society. The result is a dichotomy between wanting to keep teens from having sex, and ensuring that they are equipped with the knowledge and emotional tools to navigate sexual relationships in a healthy and safe manner. For the federal government, sexual education is a tool to reduce teen birth rates, STD rates, and the overall health of teens.

The federal government began providing funding for abstinence-only sexual education in the 1980s to decrease teen pregnancy and poverty in the United States. In the last two decades a significant body of research has found that comprehensive sexual education is more effective than abstinence-only sexual education to obtain lower teen birth rates and improve teen physical and mental health. This study investigates the effects of states rejecting federal funding from the Title V Abstinence-Only Until Marriage Program on teen health and behavioral outcomes.

Research Questions

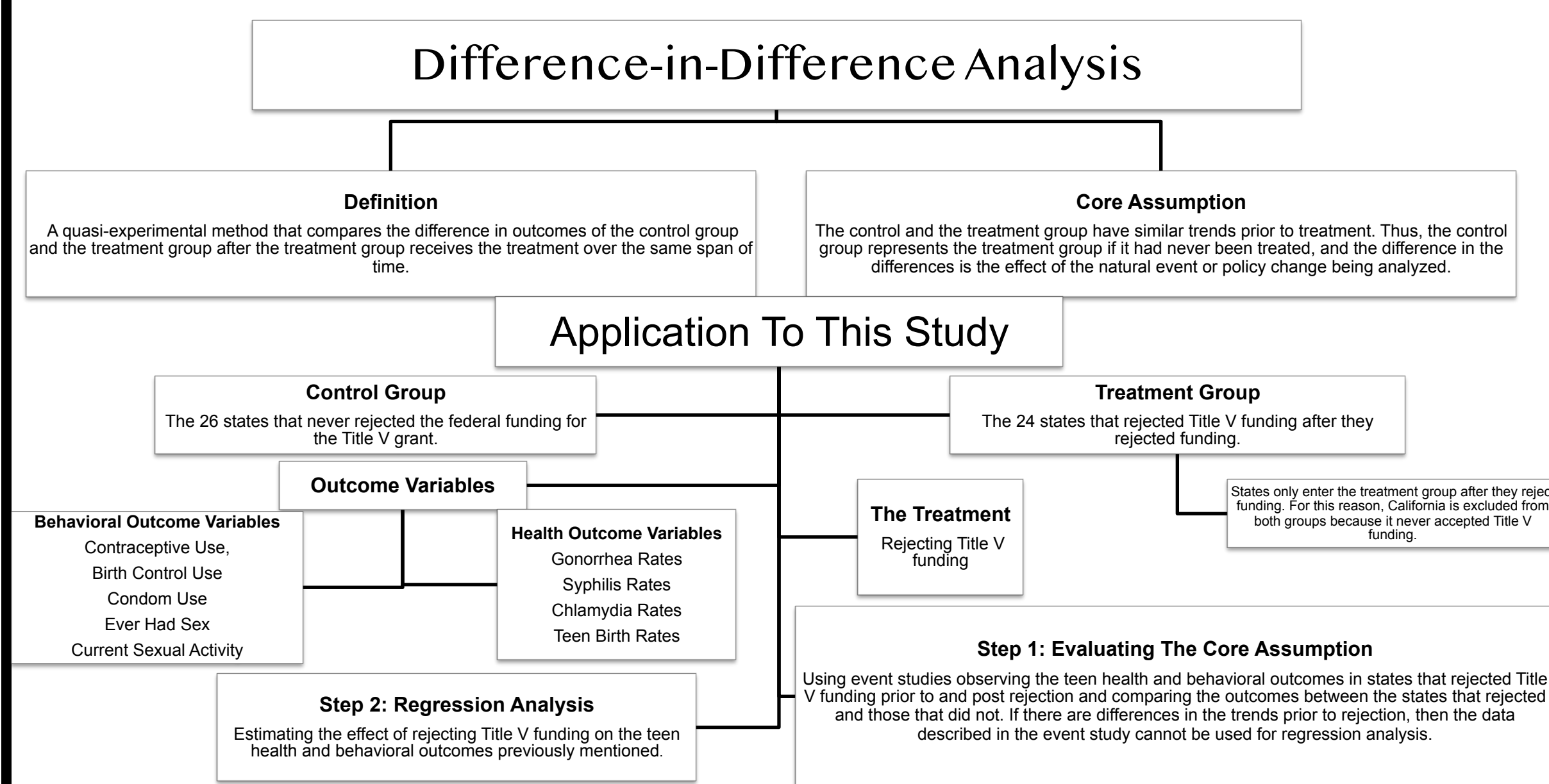
1. Do state-level sexual education policies have an effect on teen health and behavioral outcomes?
2. What is the effect of rejecting federal abstinence-only sexual education funding on teen health and behavioral outcomes, specifically contraceptive use, STD, and teen birth rates in the United States?

Hypothesis

I hypothesize that the rejection of Title V funding will result in an increase in contraceptive use, and decreases in STD and teen birth rates. I am basing this hypothesis off previous research in this field and the assumption that if states are rejecting abstinence-only sexual education then they are moving to a comprehensive curriculum. The core difference in the two curriculums is comprehensive sexual education instructs students on proper contraceptive use, while abstinence-only does not. Transitioning to a curriculum with instruction on contraceptive should increase its use and decrease STD and teen birth rates.

Methods

This study will utilize an economic quasi-experimental method of analysis known as a difference-in-difference analysis. In economics it is often hard and illegal to conduct experiments that have truly random control and treatment groups. Instead, economic studies often rely on natural experiments, or quasi-experimental studies. These observational studies rely on policy changes or natural events to mimic a random assignment of treatment and control groups.



Progression of States Rejecting Title V Funding

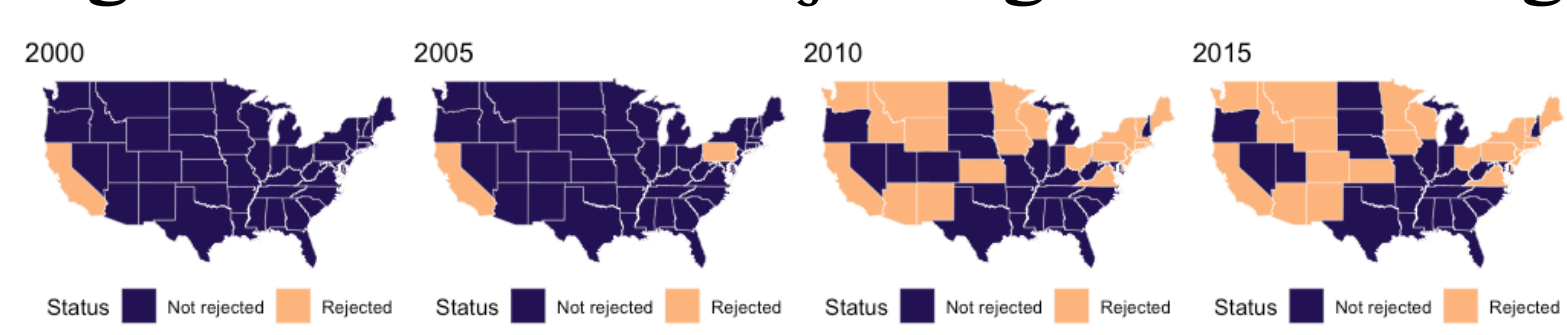


Figure 1: These maps represent the progression of states rejecting Title V funding from 2000 to 2015. The majority of states rejected funding between 2006 and 2009. California was the only state to reject funding when Title V first became available. Due to the fact that it never accepted funding, it has been excluded from this study. The data for these graphics comes from the SIECUS State Profiles from Fiscal Year 2003 and Fiscal Year 2016.

Event Study Results

Behavioral Outcome Variable Event Studies

First, the results of the event studies for teen behavioral outcomes. All of the data for the teen behavioral outcomes comes from the same survey, each dataset includes data on teen health behaviors for on the basis of sex and grade. Due to lack of consistent data by grade, this study will only examine the data with respect to all grades—the variable for this is “Grade = Total.” Three separate event studies were conducted for every behavioral outcome variable: one on examining male responses, one examining female responses, and one examining the responses of males and females combined.

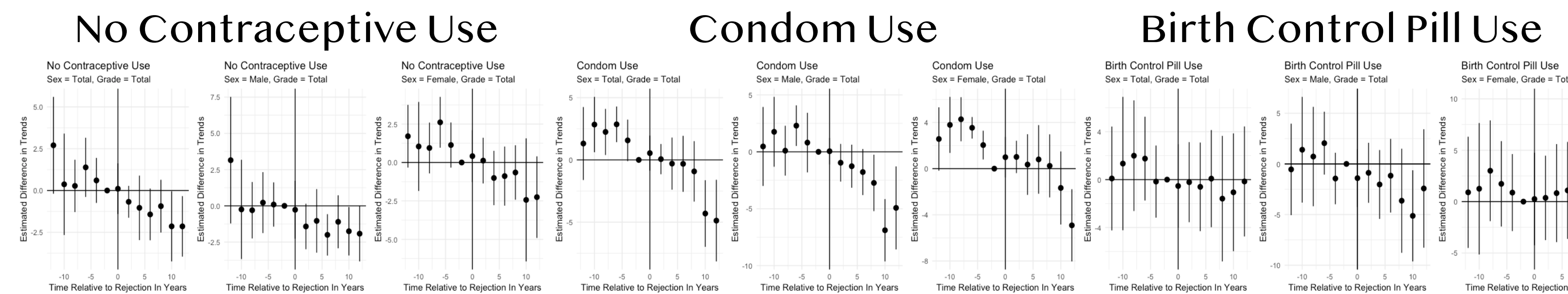


Figure 2: Event studies of the “No Contraceptive Use” dataset for combined responses(left), male responses(middle), and female responses(right). The event studies for combined and male responses showed displayed similar trends between the treatment and control groups. The event study of female responses did not. The data comes from the CDC’s YRBSS survey.

Figure 3: Event studies of the “Condom Use” dataset for combined responses(left), male responses(middle), and female responses(right). The event study of male responses displayed similar trends between the treatment and control groups. The event studies for combined and female responses did not. The data comes from the CDC’s YRBSS survey.

Figure 4: Event studies of the “Birth Control Pill Use” dataset for combined responses(left), male responses(middle), and female responses(right). The event studies of all three response groups displayed similar trends between their treatment and control groups prior to rejection. The data comes from the CDC’s YRBSS survey.

Health Outcome Variable Event Studies

The event studies for the health outcome variables are displayed below. The event studies for STD rates have two age groups per STD: 0-14 and 15-19. The event studies for teen birth rates also have two age groups: mothers under 15 and mothers 15-19.

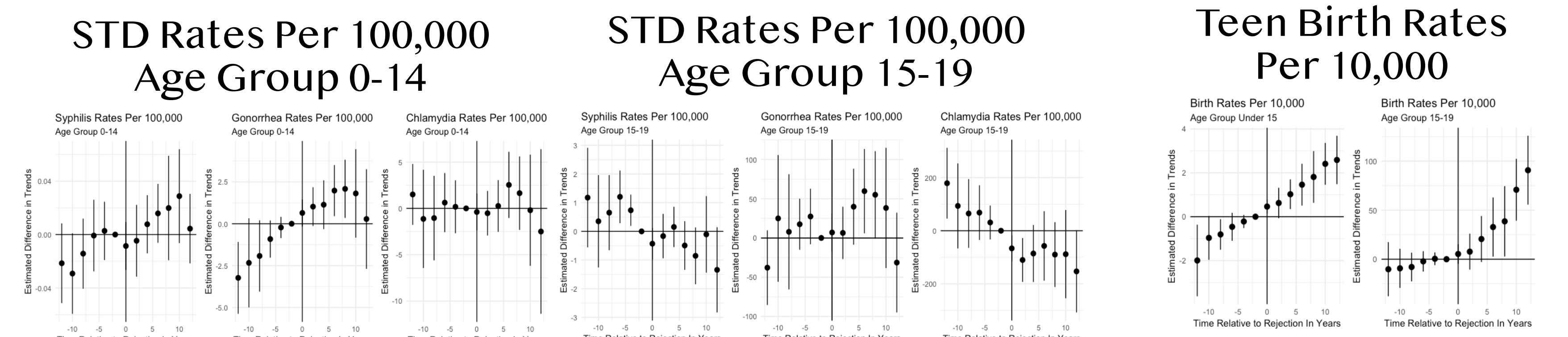


Figure 5: Event studies of the following STD rates per 100,000 for the 0-14 age group: syphilis(left), gonorrhea(middle), and chlamydia(right). The event study chlamydia rates per 100,000 displayed similar trends between the treatment and control groups. The event studies for syphilis and gonorrhea did not. The data comes from the CDC’s NCHHSTP AtlasPlus.

Figure 6: Event studies of the following STD rates per 100,000 for the 15-19 age group: syphilis(left), gonorrhea(middle), and chlamydia(right). The event study for gonorrhea rates per 100,000 displays similar trends between their treatment and control groups. The event studies for syphilis and chlamydia rates per 100,000 do not. The data comes from the CDC’s NCHHSTP AtlasPlus.

Figure 7: Event studies of the teen birth rates per 10,000 girls for the following age groups: mothers under 15(left) and mothers between 15 and 19 years old. The event study for mothers between 15 and 19 years old displays similar trends between its treatment and control groups. The event study for mothers under 15 does not. The data comes from the CDC’s Wonder tool and the National Cancer Institute’s SEER.

Regression Results

This portion of the results section records the results of the difference-in-difference regression analysis of the eleven outcome variables that qualified due to their event study results. The regression results each outcome variable will provide estimates for β in the in the following equation:

$$outcome_variable = \alpha + \beta * post_rejection + \epsilon$$

Thus, the estimates for β represent the estimated effect of rejecting Title V funding on the outcome variable. The regression results are reported below in the following table. If an estimate has a $Pr(>|t|)$ value with “***” that means the estimate is statistically significant at the 99% confidence level and “**” is the 95% confidence level.

Outcome Variable	Coefficient Estimate	Standard Error	t-value	Pr(> t)
Total Responses for Contraceptive Use	-1.8635	0.6468	-2.881	0.00425**
Male Responses for Contraceptive Use	-2.0276	0.8325	-2.436	0.0154*
Male Responses for Condom Use	-2.7529	0.8309	-3.313	0.00103 **
Total Responses for Birth Control Use	-0.9953	1.0860	-0.916	0.36
Male Responses for Birth Control Use	-1.863	1.198	-1.555	0.121
Female Responses for Birth Control Use	-0.3429	1.2087	-0.284	0.777
Chlamydia Rates, 0-14	0.3673	1.3212	0.278	0.781
Gonorrhea Rates, 15-19	19.64	24.84	0.791	0.429
Teen Birth Rates, Mothers 15-9	25.70	14.61	1.759	0.0788

Table 1: Overview of all of the regression results previously reported in this section. The only statistically significant results are total and male responses on contraceptive use and male responses on condom use. They all indicate increases in use by less than a percent as a result of Title V funding. No other conclusions can be drawn from these results.

In general, these results do not directly conflict with my hypothesis, but they also do not entirely support it. Since there was a—minimal—statistically significant increase in contraceptive use and condom use, I can conclude that rejection of Title V funding is correlated with an increase in some contraceptive use, but not necessarily all. Due to the fact that none of the health outcome variables had statistically significant estimates, I cannot conclude the effect that rejecting Title V had on them. It may be that rejecting the funding had no effect on them. It is also possible that these datasets, specifically the STD ones, are very loud and even if rejecting Title V did effect them, it could have been drowned out by the noise already present in the data. The results for the health outcome variables were inconclusive, and the fact that they were so ambiguous instead of rejecting my hypothesis means there is more work to be done on the structuring of this study.

Conclusions

The results from this study were inconclusive and do not allow me to fully confirm my hypothesis. Based off of the literature that I reviewed for this project, I anticipated that the treatment group would show a decrease in STD and birth rates, and an increase in contraceptive use rates. Only one of these assumptions is partially supported by the results from this study, and that was the increase in contraceptive use. The increase in contraceptive use rates after rejecting Title V funding is similar to the results that Douglas Kirby reported after analyzing 73 studies on the effects of comprehensive sexual education programs on teen health and behavioral programs. Kirby found that comprehensive sexual education programs resulted in an increase in both condom and overall contraceptive use—my results indicate this as well.

None of the results for STD and birth rates were statistically significant in my study. These results are in line with the general uncertainty about the effect comprehensive vs. abstinence-only sexual education on STD and teen birth rates. Both Kirby and Carr and Packham were unable to conclude if comprehensive education resulted in lower STD and teen birth rates than abstinence-only education. Although Kirby’s study was very different than the structure of mine, but Carr and Packham’s 2016 study also used the rejection of Title V funding as the event being studied and the same dataset for teen birth rates.¹ This indicates that my inconclusive results are not an anomaly.

I chose the to use the rejection of Title V funding because almost half of the states in the U.S. decided to reject the funding and because the A-H definition of abstinence-only sexual education is extremely strict. A policy change from this severity of abstinence-only education has the potential to change teen sexual behavior. This is especially likely due to the fact that under Title V, students were not instructed on how to use contraceptives. An assumption that this study made—but that may not have been correct across the board—is that once Title V was rejected, the states in the treatment group would transition to comprehensive sexual education. This assumption is not necessarily true because the majority of states that rejected Title V funding were still receiving other federal grants for abstinence-only sexual education.

Although the simplicity of the model in this used was helpful in pinpointing the specific effects that the rejection of Title V funding had on teen health and behavioral outcomes, it did not adequately account for the high volume of variables that effect these outcomes. Due to the large variability in sexual education curriculums across the country, further study on this topic would need to be scaled down to compare states with similar sexual education curriculums.

Despite its inconclusive results, this study highlights the complexity of this topic, and the difficulty researchers face in finding causal effects rejecting federal grants for abstinence-only sexual education and teen health and behavioral outcomes.

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Acknowledgments

I would like to thank Professor Graboyes and Professor Rubin for mentoring me through all of the stages of this project. It would not have been possible without their guidance and support over the last year and half. I would also like to thank the Office of the Vice President for Research and Innovation for the opportunity to participate in the VPRI Undergraduate Research Fellowship program and the generous grant they awarded which allowed me focus on my research during the summer of 2019. I am grateful for constant support of my academic endeavors from my parents and the support of my friends through the ups and downs of the research process. Finally, I would like to thank the Clark Honors College for providing me with the opportunity to participate in individual research and the guidance to resources necessary to complete this project.