Journal of Social, Behavioral, and Health Sciences
2016, Volume 10, Issue 1, Pages 69–81

DOI: 10.5590/JSBHS.2016.10.1.08

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A Comparative Analysis of Mississippi Rural Schools' Abstinence-Only and Abstinence-Plus Programs

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Mississippi responded to high teenage pregnancy rates by enacting a law requiring school districts to choose between an abstinence-only or abstinence-plus program. However, there is limited research on Mississippi's sex education policies, creating a research gap that inhibits developing successful programs**.** There is a need to compare the two programs with a focus on rural areas. This study compared programs by examining students' abstinent sexual attitudes, social norms, self-efficacy, sexual abstinence behaviors, and perceived effectiveness of sexual education and decision making to address whether those variables differed by programs and if there was an interaction between programs and students' sex. Guided by the health belief model, social cognitive theory, and theory of reasoned action, data was collected from 366 students by way of a demographic survey and the Sexual Risk Behavioral Belief and Self-Efficacy, Sexual Abstinence, and Effectiveness of Sexual Education Scales. Abstinence-plus program students had higher levels of abstinent sexual attitudes, social norms, self-efficacy, and decision-making self-efficacy than abstinence-only program students, with a small effect size for abstinent social norms. Sexual abstinence behavior scores did not differ by programs, and there was no interaction between programs and students' sex. Results indicate future studies should include a pretest and posttest evaluation.

Keywords: *sexual education, abstinence, rural areas, teenage pregnancy, HIV/STIs*

Introduction

Lack of opportunities, knowledge, and access to transportation (i.e., giving them the freedom to meet without being seen) has been cited as a leading cause of increases in rural area teenagers' risky sexual behaviors (Adimora et al., 2001; Enah, Vance, & Moneyham, 2015; Hallum-Montes et al., 2016; Milhausen et al., 2003; Oetting, Edwards, Kelly, & Beauvais, 1997). Particularly, in comparison to other states in the United States, the predominantly rural state of Mississippi has one of the highest teenage pregnancy and sexually transmitted infection (STI) rates (Centers for Disease Control and Prevention [CDC], 2011; CDC, 2012). The CDC (2011) reported that among all pregnancies in Mississippi, the teen pregnancy rate (ages 15–19) was between 50.6 and 64.2% in

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This manuscript was completed in partial fulfillment of the PhD requirements in health psychology at Walden University, under the direction of Dr. Brian Zamboni.

2008 and 2009. Mississippi also had over 20,000 new cases of STIs among teenagers and young adults (ages 15–24) in 2010 (CDC, 2012). These high rates create a public health problem.

These statistics contributed to the State of Mississippi's 2011 legislative session passing a house bill that required the state's public school districts to have a sex education course as a part of their curriculum. This bill allowed each school district to choose between two programs for their high schools: abstinence-plus or abstinence-only (Mckee, 2011). These two programs will be discussed later.

Rural Areas

Stereotypically, there is the assumption that social problems are nonexistent in rural areas because of their geographic isolation, religious influences, closer family and community ties, and the lack of accessible illegal substances (Blinn-Pike, 2008; Burton, Brown, & Johnson, 2013). However, people in rural areas experience stress due to a shortage of educational opportunities, high poverty, and unemployment rates (Blinn-Pike, 2008; Townsend, Sathiaseelan, Fairhurst, & Wallace, 2013). Meeting those challenges can be stressful for adults and children, increasing the risk of sexual abuse, substance use, and psychological distress that can take place when healthier coping efforts fail (Champion & Kelly, 2002). This increase in risks can make adults and teens more susceptible to risky sexual behaviors, thus warranting a need for programs that focus on their sexual health.

Sexual Education

Sex education is often viewed as guidance as an educational process that targets a person's development, maturity, sexual life, and sexual impulse (Matziou et al., 2009). Haffner (1992) argued that the purpose of sexual education is to produce a world of responsible and knowledgeable people that make safe sexual choices, regardless of age, gender, sexual orientation, or socioeconomic status.

The initiation of school-based sexual education came during the twentieth century from physicians and moral crusaders such as ministers and activists (Irvine, 2004). From its conception, this group did not agree about the content and purpose of sexual education (Irvine, 2004). However, this group came together to advocate for public speech against the restrictive measures of activists who wanted to place restrictions on public sexual discourse including sexual education and contraception (Irvine, 2004). Modern debates about sexual education continue the controversy between restrictive (abstinence-only) and unrestrictive (abstinence-plus) public discourse about sex. This controversy has continued into the 21st century.

Abstinence-Only Programs

Abstinence is the act of refraining from any sexual activity (Underhill, Operario, & Montgomery, 2009). Abstinence-only education programs promote abstinence from sexual activities until marriage, and discuss the failure rates of condoms and contraceptives (Masters, Beadnell, Morrison, Hoppe, & Gillmore, 2008). Either these programs exclude discussions about contraception, or they highlight the limitations of using them to protect against pregnancies and STIs. Abstinence-only programs encourage sexual abstinence as the only way to avoid HIV/STIs (Underhill et al., 2009).

Abstinence-only supporters suggest that being knowledgeable about contraceptives and pregnancy will encourage promiscuous sexual activity among adolescents (Blackburn, 2009). These supporters argue that educational programs that only teach abstinence can decrease sexual activities.

Abstinence-only supporters argue that unrestricted public discourse about sex is irresponsible and misguided. These supporters indicate that there should be limits to public discourse with adolescents. They point out that information should not be provided that could lead to harmful and immoral thoughts and behavior (Blackburn, 2009; Donovan, 1998; Irvine, 2004; Kirby, 2008). They indicate that unrestricted programs (abstinence-plus) make allowances for homosexuality, teach youth how to have sex, and undermine "parental authority" (Blackburn, 2009; Donovan, 1998; Irvine, 2004; Kirby, 2008). Abstinence-only supporters suggest that restricting or eliminating dialogue about sex best protects adolescents and preserves sexual morality (Blackburn, 2009; Donovan, 1998; Irvine, 2004; Kirby, 2008).

Restrictive (abstinence-only) programs are the only options in some states, but they are the programs of choice in other states (Yoo, Johnson, Rice, & Manuel, 2004). Although Mississippi's schools have a choice of teaching either program (abstinence-only or abstinence-plus), more than 50% of the state's public schools have chosen abstinence-only ("Abstinence-only is the choice," 2012). However, data supporting the effectiveness of abstinence-only programs is lacking (Erkut et al., 2013; Kantor, Santelli, Teitler, & Balmer, 2008; Kirby, 2008; Masters et al., 2008; Trenholm, Devaney, Fortson, & Quay, 2007; Underhill et al., 2009; Yoo et al., 2004).

Abstinence-Plus Programs

Comprehensive programs are abstinence-plus programs. Abstinence-plus education is a program that promotes abstinence from sexual activities as the best preventative approach, but it also includes material on pregnancy, HIV, STIs, and contraceptives (Masters et al., 2008). These programs may vary with respect to the kind of information they provide and their emphasis on abstinence as the safest choice (Realini, Buzi, Smith, & Martinez, 2010).

Supporters of unrestricted sexual public discourse in the classroom view sexuality as positive and healthy (Irvine, 2004). These supporters report that comprehensive approaches to sexual education allow students to discuss sexual attitudes and values in a classroom setting (Irvine, 2004; Lesko, 2010; Masters et al., 2008). Unrestrictive (abstinence-plus) program supporters suggest that silence or restricted sexual education has fostered illiteracy, humiliation, and social problems (Irvine, 2004; Lesko, 2010).

Several researchers have studied the influence of abstinence-plus programs on teenagers' sexual health and some studies on the effectiveness of these programs have shown some positive results (Kirby, 2008; Kohler, Manhart, & Lafferty, 2008; Realini et al., 2010). Abstinence-plus advocates report that these programs can delay teenagers' initiation of sexual activities and increase contraceptive use (Kirby, 2008). Those advocates indicate that abstinence-plus programs are effective more often than abstinence-only programs (Kirby, 2008). Nevertheless, even though several abstinence-plus programs have been effective, most United States schools continue to use abstinence-only programs (Lindberg, Santelli, & Singh, 2006; Realini et al., 2010).

Present Study

Mississippi is a primary state of interest because its rates of HIV/ STIs and teenage pregnancy are higher than other states within the United States (CDC, 2011). Southern states have been reported to have higher teenage birth rates than other parts of the United States (Mathews, Sutton, Hamilton, & Ventura, 2010; Moore, Barr, & Johnson, 2013). More studies are needed that focus on factors that affect teens' sexual behaviors across ethnicities, genders, and locations; these factors

may increase knowledge of the behavioral differences (Moore et al., 2013). In light of this information, this study focused on teens' sexual behaviors in rural Mississippi schools.

The purpose of the present study is to compare the effectiveness of two sexual education programs in rural communities (population less than 13,000) in Mississippi. Comparison of the abstinence-plus and abstinence-only program were done by examining students' sexual abstinence behaviors, perceived effectiveness of sexual education and decision-making skills, abstinence sexual attitudes, social norms, and self-efficacy after the completion of their program. Sexual abstinence behaviors are a precise set of behaviors and beliefs that are used to avoid sexual activity by unmarried individuals who are interested in a loving relationship with a companion (Norris, Clark, & Magnus, 2003). Sexual decision-making is an individual's belief in their ability to make a decision in a sexual situation. Abstinence sexual attitudes are personal thoughts, feelings, and beliefs about practicing abstinence. Abstinence social norms are the degree to which a student thinks others, their peers, practice sexual abstinence. Abstinence self-efficacy is an individual's belief in their ability to practice abstinence in a sexual situation. Research on the state's school-based sex education policies is necessary in order to understand how to develop successful sexual education programs that target teenagers in Mississippi.

Method

Theoretical Framework

The health belief model, social cognitive theory (SCT), and theory of reasoned action are common in health behaviors studies. According to Montanaro and Bryan (2013), these theories are well established in the literature describing their use for changing and predicting behavior. Together, these theories make up the integrative model of behavior change, incorporating constructs from each theory (Bleakley, Hennessy, Fishbein, & Jordan, 2009). Those models have a precise and well-articulated set of theoretical ideas, enabling effective measurement, and intervention content (Montanaro & Bryan, 2013).

According to Rosenstock (1974), the health belief model was initially designed to explain and predict health behaviors. This cognitive model is used to gain knowledge about health risk behavior and has provided a foundation for many prevention-centered programs and studies (Downing-Matibag & Geisinger, 2009). The SCT was designed to describe how behavior patterns are developed and retained and it embodies an important opportunity as the foundation for behavioral interventions to improve adolescents' sexual health (Chisholm-Burns & Spivey, 2010; Rosenstock, Strecher, & Becker, 1988). The SCT has provided at least two major contributions to clarifications of health-related behavior: self-efficacy and observational learning and reinforcement (Bandura, 1977; Rosenstock et al., 1988). The theory of reasoned action was developed to insist that behavior is decided by intention to complete that behavior that offers the most precise behavioral prediction (Fishbein & Ajzen, 1980).

Procedure

A cross-sectional quantitative quasiexperimental comparative survey design was used to examine and compare Mississippi's sexual education policies in rural area schools. Participants were solicited from two rural high schools, one school that implemented an abstinence-plus curriculum and one school that implemented an abstinence-only curriculum. Between the two rural public high schools,

600 survey packets (surveys, consent form, and assent form) were mailed out to students who had taken the sexual education course. Of those 600 surveys, only 366 completed surveys were returned, 186 were abstinence-only education recipients and 180 were abstinence-plus education recipients with a response rate of 61%. This response rate was adequate; according to several researchers, a 50% response rate or higher is acceptable in social research postal surveys (Babbie, 1973; Kidder, 1981; Richardson, 2005).

The 2012–2013 school year was the first year that schools in Mississippi were required to teach a sexual education course. All students entering high school after 2011 must take a course in sexual education before their graduation. Students can take this class at any grade level (ninth, 10th, 11th, or 12th). Therefore, this study only included those students who had already completed the sexual education course. Participants consisted of high school students living in Mississippi's rural areas who were fluent in the English language (for reading purposes). These participants consisted of teenagers ranging from 15 to 19 years of age. This study included 10th, 11th, and 12th graders. African-Americans made up 94% of the students' population and 6% of the students' population consisted of Native Americans, Whites, Asians, and Hispanics (see Table 1).

Table 1: *Demographic Characteristics of the Study Sample (N = 366)*

	Abstinence-only (n = 186)			Abstinence-plus (n = 180)		
Characteristics	n	%	M (SD)	n	%	M (SD)
Age			16.06 (1)			16.2 (.99)
15	60	32.3		47	26.1	
16	77	41.4		74	41.1	
17	28	15.1		38	21.1	
18	18	9.7		18	10	
19	3	1.6		3	1.7	
Sex						
Male	86	46.2		89	49.4	
Female	100	53.8		91	50.6	
Race/Ethnicity						
Black/African American	171	91.9		173	96.1	
White/ Caucasian	7	3.8		6	3.3	
Hispanic/Latino	5	2.7		0	0	
Other	3	1.6		1	0.6	
Grade level						
10th	60	32.3		55	30.6	
11th	77	41.4		74	48.1	
12th	49	26.3		51	28.3	
Sexual orientation						
Heterosexual	176	94.6		167	92.8	
Bisexual	7	3.8		5	2.8	
Homosexual	2	1.1		8	4.4	
Not given	1	.5		0	0	
Religious affiliation						
Have an Affiliation	171	91.9		166	92.2	
No Affiliation	15	8.1		14	7.8	

Participants were recruited using data from the databases of two public high schools in Mississippi. This recruitment took place from March 2015 through May 2015; the participating schools' counselors mailed out materials (consent form, assent form, survey, and clasp envelope) on the researchers' behalf. Their giving their child the assent form and survey implied the parent's consent. Students completing the survey and returning it to the school in the sealed clasp envelope implied their assent. Students who chose to participate delivered this envelope to a locked drop box in the school foyer and the researchers returned 5 weeks later and collected the completed surveys from the locked drop box. Walden University Institutional Review Boards approved the procedures (Approval Number 02-23-15-0172914).

Analytical Procedures

This study compares both programs based on three scales: Sexual Risk Behavioral Beliefs and Self-Efficacy Scale, Sexual Abstinence Scale (SRBBS), and Effectiveness of Sexual Education Scale (ESES). The SRBBS is a 22-item self-report scale with two factors (sexual risk-taking behavior and protective behaviors) that measured students' abstinence sexual attitudes, social norms, and self-efficacy (Fisher, Davis, Yarber, & Davis, 2011). However, this study only used the seven items from the sexual risk-taking behavioral factor—attitudes toward sexual intercourse), self-efficacy for refusing sexual intercourse, and norms toward sexual intercourse—because the protective behavior factor includes a conversation about using some form of contraception, creating an issue for the study participants who completed the abstinence-only program. Each subscale was measured by Cronbach's alpha and the internal consistencies were as follows: attitudes toward sexual intercourse, .78; norms toward sexual intercourse, .78; and self-efficacy for refusing sexual intercourse, .70.

The Sexual Abstinence Behavior Scale is a four-item self-report scale that measured the degree to which a person has been sexually abstinent (Norris et al., 2003). The Sexual Abstinence Behavior Scale's internal consistency was .59. The Effectiveness of Sexual Education Scale is a seven-item self-report scale that measured students' perceived effectiveness of the sexual education and sexual decision-making skills (Pittman & Gahungu, 2006). The ESES' internal consistency was .68. High scores on the ESES, Sexual Abstinence Scale, and SRBBS reflect a greater endorsement of abstinence attitudes, abstinence self-efficacy, abstinence social norms, sexual decision-making skills, and their program.

Data Analysis

Several two-way analysis of variance (ANOVA) tests were used to answer the following research questions: Are there significant differences in Mississippi rural students' abstinence attitudes towards sexual intercourse, abstinence social norms, and sexual abstinent behaviors by type of sexual education program? Are there significant differences in Mississippi rural students' abstinence self-efficacy, and the perceived effectiveness of his or her sexual education and decision-making skills by type of sexual education program? A two-way ANOVA was performed to examine a program by gender interactions effect.

Results

The ANOVA revealed significant differences between sex education programs in mean scores for the scales measuring abstinence sexual attitudes, $F(1, 362) = 117.21$, $p < .05$, $\eta^2 = .25$. The mean score for the students who took the abstinence-plus program ($M = 3.2$) was higher than students who took the abstinence-only program ($M = 2.84$), with a medium effect size. A higher average score on the assessments of abstinent sexual attitudes mean that more students who had taken the abstinence-plus course believed

that they should wait to have sex and that it is not okay to have sex with a steady partner. Higher scores reflect greater endorsement of abstinent sexual attitudes.

There were significant differences between sex education programs in mean scores for the scales measuring abstinence social norms, F (1, 362) = 14.12, $p < .05$, $\eta^2 = .04$. The mean score for the students who took the abstinence-only program ($M = 2.81$) was slightly lower than students who took the abstinence-plus program ($M = 2.99$), with a small effect size. A higher average score on the assessments of abstinent social norms mean that more students who had taken the abstinence-plus course believed that their peers thought that teenagers should wait to have sex and that it is not okay to sex with a steady partner. Higher scores reflect greater endorsement of the extent to which a student thinks others, their peers, practice sexual abstinence.

The ANOVA showed significant differences between sex education programs in mean scores for the scales measuring abstinence self-efficacy, F (1, 362) = 426.38, p < .05, η2 = .54. The mean score for the students who took the abstinence-only program (M = 2.06) was lower than students who took the abstinence-plus program (M = 2.52), with a large effect size. A higher average score on the assessments of abstinent self-efficacy mean that more students who had taken the abstinence-plus course believed that they were able to abstain from having sex until they were ready. Higher scores reflect greater endorsement of abstinence refusal skills.

There were significant differences between sex education programs in mean scores for the scales measuring perceived effectiveness of sexual education and decision-making skills, F (1, 362) = 2,451.76, p < .05, η2 = .87. The mean score for the students who took the abstinence-plus program (M = 3.46) was higher than students who took the abstinence-only program (M = 2.19), with a large effect size. A higher average score on the assessments of perceived effectiveness of sexual education and decision-making mean that students who completed the abstinence-plus program rated their sex education as more effective than abstinence-only program and they had higher sexual decision-making self-efficacy. High scores reflect greater endorsement of abstinent attitudes, abstinence self-efficacy, abstinent social norms, sexual decision-making skills, and their program. There was no statistically significant difference between groups in mean scores for the scale measuring sexual abstinence behavior.

The two-way ANOVA did not find a significant interaction between participant's sex and program type on the dependent variables: abstinence sexual attitudes, F (1, 362) = 1.03, $p > .05$, $\eta^2 = .00$, or abstinence social norms, F (1, 362) = 2.8, $p > .05$, $\eta^2 = .01$. There were no differences between abstinence self-efficacy, F (1, 362) = .02, $p > .05$, $\eta^2 = .00$, sexual abstinence behavior, F (1,362) = .13, $p > .05$, $\eta^2 = .00$, and perceived effectiveness of sexual education and decision-making skills, F (1, 362) = 4.22, $p > .05$, $\eta^2 = .01$.

Discussion

This study showed several significant differences between abstinence-only and abstinence-plus sexual education programs. The findings suggest that abstinence-plus students' scores were higher than abstinence-only students' scores, as were: abstinence sexual attitudes, social norms, self-efficacy, and perceived effectiveness of sexual education and decision-making skills. These differences between abstinence-only and abstinence-plus students' scores are not surprising because although both programs teach abstinence, abstinence-plus programs also included material on pregnancy, HIV, STIs, and contraceptives (Masters et al., 2008). Furthermore, several previous

studies (Kirby, 2008; Lindberg & Maddow-Zimet, 2012; Masters et al. 2008; Realini et al., 2010) have reported results that were consistent with the current findings.

The present study consisted of two schools from different districts (one abstinence-plus and one abstinence-only). The school districts' superintendents decided on the best strategy for implementing the program in their schools and the strategies differed between the schools. Therefore, different teaching strategies or the program's design could have affected students' scores measuring abstinent sexual attitudes, social norms, self-efficacy, and perceived effectiveness of sexual education and decision-making skills. For example, the abstinence-only school only used textbooks that gave vague information to inform students. The abstinence-plus school used their textbooks and had a health promotion specialist from the health department talk to their students. They also implemented round table discussions in their classroom with young women who volunteered to discuss their teenage experiences with risky sexual behavior and the problems that they experienced.

As previously stated, the abstinence-plus program provided more information than the abstinence-only program because it acknowledged that students are different and provided ways for students to protect themselves (i.e. condoms and contraception) if they decide to explore their sexuality or if they are pressured by peers to engage in such activities. It also talked about abortion, STIs, and HIV/AIDS. When students in abstinence-plus programs are made aware of all options (using protective measures, abstaining from sex until marriage, and the problems associated with unprotected or risky sex), they are left with the responsibility to make the best decision for their situation. This may help their confidence (self-efficacy) and shape their prospective attitudes about sex. Students who enjoyed their program and were more intrigued by the information that they received will probably have a more favorable view of their sexual education and decision-making skills.

The abstinence-plus and abstinence-only programs encouraged abstinence and both programs taught self-efficacy skills by building students' characters, values, and refusal skills (Fentahun, Assefa, Alemseged, & Ambaw, 2012). These skills included guided practice with positive reinforcements and observational learning through role-playing and observing role-playing, which can increase self-efficacy (Zhang, Jemmott, & Jemmott, 2015). Nevertheless, a difference between students' scores, measuring self-efficacy to refuse sex, by programs still existed with a moderate effect size. This difference may be because abstinence-plus programs accept the fact that some students will engage in sexual activity and present students other options, allowing them an opportunity to take charge of their sexual health. This self-control or autonomy enhances self-efficacy. Therefore, it is a logical assumption that students with a high self-efficacy score have confidence in their abilities and have accepted that they are in control and would be able to carry out the desired behavior. Students with a low self-efficacy score lack confidence in their abilities and will be apprehensive because they have not reconciled their desire to explore with the message of "do not explore."

The abstinence-plus students' scores on the scale measuring sexual abstinence did not differ from the abstinence-only students' average score. Students in both programs' sexual abstinence behavior scores are similar, having low average scores. One explanation for the lack of difference in students' average sexual abstinence scores between programs may be reflective of focusing on too many things in a short amount of time. Most schools have implemented short-term sex education courses that usually have a small effect on students' behaviors (Kirby, 2001; Sabia, 2006). In other words, perhaps both programs were too broad, focusing on too many different topics rather than putting an

emphasis on abstinence. In a past review of school-based programs, Kirby et al. (1994) discovered that narrowly focused programs were more effective at reducing sexual risk-taking behaviors than broadly focused programs. Successful programs fixated on specific behavioral goals such as postponing sexual intercourse and the use of contraceptives, and spent less time on other sexuality issues such as dating, gender roles, and parenthood (Kirby et al., 1994).

The lack of difference in students' average sexual abstinence scores between programs may also be reflective of the programs' foundation, lacking a theoretical base. Kirby et al. (1994) discovered that social learning theory-driven programs were effective at influencing health-risk behaviors. According to SCT, sexual behaviors are affected by a knowledge of what one must do to avoid sex, have an understanding of the benefit of abstinence, and maintain a certainty that practicing abstinence is the most effective and achievable goal.

The results of the present study should not be interpreted to suggest that neither program could influence students' sexual abstinence behaviors. Rather, the results indicate that normal short-term school-based sex education programs that are not theory-driven tend to have similar measurable health effects on students' sexual abstinence behaviors (Sabia, 2006). It is difficult to measure the effectiveness of educational programs that promote abstinence because of weak designs, the heterogeneity of programs' curriculum, and the implementation of these programs (Chin et al., 2012). Different programs such as long-term follow-up, long-term interventions, and theory-based abstinence-only or abstinence-plus programs may have different results (Sabia, 2006).

Critics also need to understand that the scale, measuring sexual abstinence, may not have been the best method for measuring abstinence. The scale only focused on four main questions within the past three months: Did you tell yourself that you were making the right decision by waiting to have sex? Did you say "no" to sex? Did you tell them that you wanted to wait to have sex? Did you avoid being pressured to have sex? This scale cannot accurately assess students' actual abstinence behaviors. Just because students do not remind themselves on a daily basis that they are making the right choice by waiting to have sex does not mean that students are not practicing abstinence. Furthermore, the other subsequent questions assume that everyone has been approached or asked to participate in sexual activity, not considering those individuals who may not. The scale does not assess the actual number of times that students had a sexual opportunity, the period in which the opportunity occurred, and the type of sexual behavior opportunity (e.g., giving oral sex or receiving oral sex versus penile–vaginal intercourse). Revisions to this scale might need to include questions that address those concerns and become more reflective of all experiences. Future findings may be different with this inclusion.

Limitations

The present study had several limitations. The teaching method between the two schools' teachers may have influenced the students' perceived effectiveness of their program. The sample size was not a representative of each school's total population and it only included 10th, 11th, and 12th graders, aged 15–19, in public high schools. This study did not include a pretest and it could not assess behavior change. Furthermore, the study only included students in the central Mississippi area so participants might not represent students from other areas of the state. The majority of students in both schools were African American. This study is descriptive and not causal, so one cannot make cause and effect statements based on this research. Finally, it is possible that students completed

the measures under their parents' eyes; this could affect the way that they responded to the questions (e.g., increased social desirability).

Conclusion

Sexual education starts at birth, and it plays a major role in social change, providing lifelong skills that can assist adolescents in making sound decisions and in the development of self-confidence. To build successful sexual educational programs, one must examine the preexisting programs. The present study contributes to understanding the benefits of abstinence-only and abstinence-plus programs and the influence they have on students' abstinence behaviors, abstinent sexual attitudes, self-efficacy, and social norms and sexual decision-making skills. Based on results of the study, new programs (abstinence-only or abstinence-plus) should go beyond the textbook and be charismatic informative, interactive, and innovative. Future studies should include a pretest and posttest evaluation of any type of sex education program that is implemented. Future studies should also look into other factors such sexual orientation, ethnicity, or religious beliefs and the influences these factors have on students' sexual attitudes and sexual decision-making.

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