What do Parents in Mississippi Really Think about Sex Education in School?: Results of a State-Level Survey

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Abstract

Purpose: Despite broad public support for comprehensive sex education, its implementation remains controversial in the United States, especially in states such as Mississippi that have been identified as politically conservative. This study examined parental opinions regarding the implementation of age-appropriate sex-related education (SRE) (i.e., abstinence-plus education) in Mississippi public schools.

Methods: Data were used from the first state-level survey of a randomized sample of parents (*N* = 3,600) of public school students in Mississippi. The sample was relatively equally distributed between non-Hispanic whites (52.8%) and African Americans (48.2%). Bivariate and multivariate analyses were conducted to determine parental support for a number of components associated with comprehensive sex education (i.e., condom use demonstration).

Results: More than 90% of parents endorsed implementing age-appropriate SRE in Mississippi public schools, discussing the transmission and prevention of HIV/STIs during SRE, and discussing how to get tested for HIV/STIs during SRE. More than 80% endorsed discussing where to obtain birth control during SRE and more than 70% endorsed demonstrating correct condom use during SRE. Results varied somewhat across race/ethnicity and gender, such that African American parents who were female were most supportive.

Conclusions: Although Mississippi has been identified as a politically conservative state, our results indicate that an overwhelming majority of surveyed parents endorsed age-appropriate SRE. Results may not be fully generalizable to parents across the nation, yet they are consistent with similar surveys conducted among parents in Minnesota, North Carolina, and Texas to assess attitudes towards school-based sex education.

Keywords

Comprehensive sex education; Abstinence-plus education; Abstinence-only education

Cover Page Footnote

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INTRODUCTION

As of 2011, the teen birth rate in the United States was 31.3 per 1,000 for girls 15-19 years old (CDC, 2013; Hamilton, Mathews & Ventura, 2013). As of 2008, the teen pregnancy rate in the United States was 68 per 1,000 for girls 15-19 years old (NCPTUP, 2013a). Both rates are considerably higher in the United States than in comparable developed nations (NCPTUP, 2012), as are rates of sexually transmitted infections (STIs) among youth and young adults. As a case in point, it is estimated that although 15-24 year olds represent only one-quarter of ever-sexually active 15-44 year olds in the United States, they acquire nearly one-half of all new STIs each year (Weinstock, Berman & Cates, 2004; CDC, 2012). Other current statistics indicate that resource-limited states in the Southeast such as Mississippi are severely affected by teen pregnancy, teen childbearing, and STIs (NCPTUP, 2013a; Kost & Henshaw, 2013).

For example, Mississippi has the second highest teen birth rate (50.2) in the nation (MSDH, 2011a). It also has the highest gonorrhea rate and the second highest chlamydia rate in the nation (MSDH, 2011b). African American youth in Mississippi are disproportionately at risk for teen pregnancy, teen childbearing, and STIs as compared to white youth (MSDH, 2011a; MSDH, 2011b; NCPTUP, 2013b; Ragsdale & Sutton, 2012). For example, the teen pregnancy rate among Mississippi's African American youth is 70.6 per 1,000 as compared to 45 per 1,000 among white youth (MSDH, 2011a). Likewise, 75% of gonorrhea cases in Mississippi are among African Americans (who comprise only 37.3% of the population) and 69% are among 15-24 year olds (who comprise only 15% of the population) (MSDH, 2011b; US Census, 2013).

According to the Centers for Disease Control and Prevention, "teen pregnancy and childbearing bring substantial social and economic costs through immediate and long-term impacts on teen parents and their children" (CDC, 2013 (The Importance of Prevention section, par 1). In Mississippi, the economic cost of teen childbearing has been estimated to be about $154-$159 million annually (NCPTUP, 2013b; MEPC, 2011). The social and public health costs of teen childbearing include low birth weight infants, infant mortality, high school dropout, chronic underemployment, and infants/children growing up in poverty (Basch, 2011).

Although research suggests that comprehensive sex education targeting youth is associated with reduced sexual risk behaviors, pregnancy, childbearing, and STI acquisition (Cavazos-Rehg et al, 2012; Kohler, Manhart & Lafferty, 2008; Vivancos et al, 2013), state and federal support for abstinence-only sex education (AOE) (which is also known as abstinence-only-until-marriage education) is entrenched in the United States (Santelli et al, 2006).

According to Kohler and colleagues, comprehensive sex education programs "include abstinence messages, but also provide information on birth control

methods to prevent pregnancy and condoms to prevent STDs," while AOE programs advocate sexual abstinence until marriage and "discussion of birth control methods is typically limited to statements about ineffectiveness" (2008, p. 345). State and federal support for AOE is a major concern given that—as the landmark Waxman Report (2004) found—more than 80% of the federally funded AOE programs scrutinized in the report contained "false, misleading, or distorted information about reproductive health…presented as proven scientific facts" (2004i; see also HRW, 2008). Another major concern is that even as the federal government spends an estimated $170 million each year on AOE (SIECUS, 2013a), research suggests it is ineffective in reducing sexual risk behaviors among youth (Basch, 2011; Santelli et al, 2006; Community Preventive Services Task Force, 2013; Kirby, 2007; Mueller, Gavin & Kulkarni, 2008; SIECUS, 2009).

Although a number of studies indicate broad public support for comprehensive sex education (Bleakley, Hennessy & Fishbein, 2006; Eisenberg et al, 2008; Ito et al, 2006, Tortolero et al, 2011), its implementation remains controversial in the United States (Kohler, Manhart & Lafferty, 2008; Goldman, 2011; Stanger-Hall & Hall, 2011). This is noteworthy in light of the fact that many states—including states such as Mississippi that have been identified as politically conservative (Gallup, 2012)—recognize the need for strategies to reduce pregnancy, childbearing, and STIs among youth. In response to this need, the Mississippi State Legislature passed House Bill 999 in 2011, which required that all local school boards adopt a *sex-related education* policy by June 2012 and that all public school districts implement AOE or abstinence-plus curricula for the 2012-2013 academic year (Mississippi State Legislature, 2011; SIECUS, 2013b). While maintaining that AOE "shall remain the state standard for any sex-related education taught in public schools" (Mississippi State Legislature, 2011, p. 2), the bill also contains restrictions on sex education curricula content—such as prohibiting condom use demonstration. In this paper, we examine results of a state-level survey to assess parental opinions regarding school-based sex education and discuss policy implications for implementing sex-related education.

METHODS

In response to House Bill 999, the Social Science Research Center (SSRC) of Mississippi State University was commissioned by the Center for Mississippi Health Policy to conduct the first state-level telephone survey of parents (N = 3,600) of public school students in 2011. The survey assessed parental opinions regarding the implementation of sex-related education in Mississippi public schools (McKee et al, 2011).

Using a computer-assisted telephone interview program, data were collected from September through October 2011 by trained interviewers at the SSRC Wolfgang Frese Survey Research Laboratory. The sample was randomly

selected from a telephone database from the Mississippi Department of Education of all parents in Mississippi with a child enrolled in public school. From this database of 491,540 phone numbers, the SSRC obtained 50,000 phone numbers from which we drew a final randomized sample of 3,600 participants. Eight call attempts were made before a phone number was assigned a final disposition. The sampling error for the total dataset (binomial response option with 50/50 split) was no larger than ± 3.5% with a 95% confidence interval. A finite population correction formula was applied prior to calculating the margin of error. Respondents were not compensated for participation in the 10-minute survey, which had a response rate of 55.2%. All study procedures were approved by the Mississippi State University Institutional Review Board.

Measures

The 36-item survey collected information on parents' sociodemographics and opinions regarding implementing sex-related education in Mississippi public schools. For the survey, we drew on House Bill 999 to define sex-related education as abstinence-plus education that includes AOE as defined by the Bill, as well as "information about contraceptives and barrier methods as a means to reduce the risk of pregnancy, sexually transmitted infections and diseases" (McKee et al, 2011). Participants were specifically advised that abstinence-plus education was referred to as sex-related education (SRE).

Sociodemographic characteristics

Participants were asked to identify the racial/ethnic group(s) that best described them. Therefore, the small subsample racial/ethnic minorities other than African American who completed the survey (2.5%) were excluded from the final analyses. Race/ethnicity was coded as 0 = white and 1 = African American. Gender was coded as 0 = female and 1 = male. Age was a continuous variable. Education was recoded as 0 ≤ four years of high school, 1 = 1-3 years of college, 2 = college graduate, and 3 ≥ 1 year of graduate school. Marital status was recoded as 0 = non-married (i.e., single, cohabiting, separated, divorced, widowed) and 1 = married. Income was recoded as 0 ≤ $20,000, 1 = $20,000-49,999, 2 = $50,000-74,999, and 3 ≥ $75,000. Participants were asked how many school-aged children (i.e., kindergarteners through twelfth graders) resided in their households and the grade and gender of each child. Participants were also asked whether they had voted in the last major local or national election as of October 2011.

Parental opinions regarding age-appropriate SRE

"Yes/no," multiple choice, and Likert-type items were used to assess parental attitudes towards age-appropriate SRE in Mississippi public schools. "Yes/no" items included, "In your opinion, should sex-related education be taught in the

Mississippi public school system at an age-appropriate grade level?" Multiple choice items included, "In your opinion, how should student participation in sex-related education be determined" and response categories included (1) parents should have to sign a form for their child to participate (i.e., active parental consent), (2) children should be automatically enrolled unless the parent provides a written request not to participate (i.e., passive parental consent), (3) don't know/not sure, and (4) refused.

Analysis Plan

For the 5-point Likert-type items, parents were asked to indicate their support for 15 items sometimes taught in SRE, such as "How to use a condom correctly through classroom demonstrations." Item responses ranged from "strongly support" to "strongly oppose" and included "no opinion" as the midpoint. Each item was recoded into three categories, where 1 = support, 2 = no opinion, and 3 = oppose. The 7-point Likert-type item was as follows: "On a scale of 1 to 5 with 1 being least important and 5 being most important, who do you think should determine the material taught in sex-related education class?" with the following response categories: (1) parents, (2) students, (3) school health councils, (4) principals and teachers, (5) school boards, (6) public health professionals, (7) religious leaders, (8) politicians, and (9) other. Each response category was recoded such that 1 = most important, 2 = neutral, and 3 = least important.

We conducted descriptive analyses (i.e., frequencies, cross tabulations, and correlations) to examine our variables of interest. Pearson correlations were used to determine the strength of an association between variables. We used binominal logistic regression to predict parental attitudes towards age-appropriate SRE using the following coefficients: race/ethnicity (reference category, white), gender (reference category, female), age, education (reference category, ≤ high school degree) and income (reference category, < $20,000). We examined the overall model, individual predictors, and the odds ratio (OR) to determine how each coefficient affected the outcome, using a 95% confidence interval (CI). For the logistic regression models 1-6, all responses of "don't know/not sure" and "refused" were excluded from the final analyses. Analyses were conducting using SPSS 21.0 and significance level was set at $p < .05$.

RESULTS

As Table 1 indicates, the sample (N = 3,600) was relatively equally distributed between non-Hispanic whites (52.8%) and African Americans (48.2%), and was relatively representative of Mississippi's adult population of whites and African Americans (57.7% and 37.3%, respectively) (US Census Bureau, 2013).

The majority of participants were African American females (85.6%), followed by white females (78.9%), white males (21.1%), and African American

males (14.4%). The mean age of participants was 40.4 years (standard deviation 9.9), of whom 60.9% were married. The age range of respondents' oldest child was relatively equally distributed, such that 36.1% of respondents' oldest children were in high school, 31% were in middle school, and 32.9% were in elementary school. The majority of participants had voted in the last major local or national election as of October 2011. Finally, 88.5% of parents ranked public health officials as most important in terms of determining SRE content, followed closely by school health officials (83.5%), parents themselves (74.6%), and principals and teachers (74%). Parents ranked school boards (59.5%), religious leaders (52.5%), and students (45.6%) similarly in terms of importance in determining SRE content, while politicians were ranked a distant last (21.5%).

As Table 2 indicates, 92.1% of parents endorsed implementing age-appropriate SRE in Mississippi public schools. Among the minority of parents who did not endorse this item, 4.9% believed that parents should be the ones to teach their children about sexuality, 0.4% believed it is inappropriate to teach adolescents about sex (0.4%), and 0.2% believed that SRE will encourage adolescents to engage in sexual activity. African American males and white males were significantly less likely to endorse this item ($p < .05$ and $< .001$, respectively). In addition, white males were significantly more likely than other parents to select the "not sure" response item ($p < .001$). Nearly 96% of parents endorsed SRE that instructs students on how to talk with parents about sex and relationship issues. White males were significantly less likely to endorse this item ($p < .05$). Nearly 95% of parents endorsed SRE that includes discussing transmission and prevention of HIV/STIs. White males were significantly less likely to endorse this item ($p < .001$). More than 91% of parents endorsed SRE that includes discussing how to get tested for HIV/STIs. White males were significantly less likely to endorse this item ($p < .001$). Nearly 83% of parents endorsed SRE that instructs students on how to talk with a girlfriend/boyfriend about birth control. Regardless of gender, white parents were significantly less likely to endorse this item ($p < .001$ for both groups).

More than 90% of parents endorsed instruction on birth control methods during SRE classes. Again, regardless of gender, white parents were significantly less likely to endorse this item ($p < .001$ for both groups). Eighty-two percent of parents endorsed instruction on where to obtain birth control products. African American males and white parents of both genders were significantly less likely to endorse this item ($p < .001$ for all three groups). More than 72% of parents endorsed demonstrations of correct condom use during SRE. As Table 2 indicates, white males were less likely to endorse this item ($p < .001$). Nearly 61% of parents endorsed gender-segregated SRE classes. Regardless of gender, white parents were significantly more likely to endorse this item ($p < .05$ for both groups). Nearly 55% of parents endorsed active parental consent for children to

participate in SRE (i.e., parent should have to sign a form for the child to receive SRE). White males were more likely to endorse active parental consent ($p < .001$).

Finally, parents ranked public health officials as most important in terms of determining the content of SRE, followed closely by school health officials (83.5%), parents themselves (74.6%), and principals and teachers (74%). Parents ranked school boards (59.5%), religious leaders (52.5%), and students (45.6%) similarly in terms of importance in determining the content of SRE, while politicians were ranked a distant last (21.5%).

Table 1. Sociodemographic characteristics of study sample (*N* = 3,600)

Socioeconomic Demographics			Should Sex-related Education be Taught in the Public School System?			
Participants	**Frequency**	**%**	**Yes**	**No**	**Not Sure**	**Significance**
Sex						$p < .001$
Female	2,950	81.9	93.5	4.9	1.6	
Male	650	18.1	85.8	9.8	4.3	
Race/Ethnicity						$p < .001$
White	1,800	51.8	87.7	9.4	3.5	
African American	1,675	48.2	97.6	1.9	0.5	
Income Level						$p < .001$
Below 20,000	901	29.9	95.7	3.2	1.1	
20,000 to 49,999	1,108	36.7	93.6	4.7	1.7	
50,000 to 74,999	449	14.9	87.8	9.6	2.7	
Above 75,000	560	18.6	89.8	6.8	3.4	
Education Level						$p = .05$
≥ High School education	1,389	38.7	93.4	4.8	3.8	
1-3 years of College	1,095	30.5	91.4	6.2	2.4	
College Graduate	691	19.3	92.2	5.2	2.6	
≥ 1 year graduate school	411	11.5	89.3	9.2	1.5	
Age (Years)						
18 to 29	377	10.5	95.2	4.2	0.5	
30 to 34	718	19.9	94.4	4.2	1.4	
35 to 39	742	20.6	92.7	5.1	2.2	
40 to 44	673	18.7	90.6	6.7	2.7	
45 to 54	763	21.2	89.5	7.3	3.1	
55 and Older	327	9.1	90.8	7.3	1.8	
Voted Last Major Election[a]						
Yes	2,974	82.8	93.3	5.0	1.7	$p < .001$
No	619	17.2	85.1	10.8	4.1	
Marital Status						
Married	2,193	61.1	89.8	7.4	2.7	$p < .001$
Cohabiting	77	2.1	94.8	2.6	2.6	
Single	654	18.2	97.2	2.1	0.6	
Separated, Divorced or Widowed	664	18.5	94.3	4.2	1.5	
Total[b]	**3,600**	**100**	**92.1**	**5.8**	**2.1**	

* $p < .05$. ** $p < .01$. *** $p < .001$.

[a] Voted in last major election as of October 2011.

[b] Totals may not equal 100% due to rounding.

Table 2. Items that were significant by race/ethnicity and by gender.

Should age-appropriate sex-related education be taught in Mississippi public schools?					
	N	Yes %	No %	No Opinion %	*Significance
African American	1,675				$p < .05$
Female	1,434	97.9	1.6	0.5	
Male	241	95.4	3.7	1.08	
White	1,800				$p < .001$
Female	1,420	89.2	8.1	2.7	
Male	380	79.2	14.2	6.6*	
Do you support teaching students how to talk to parents about sex and relationship issues during age-appropriate sex-related education?					
	N	Yes %	No %	No Opinion %	*Significance
African American	1,673				
Female	1,433	98.2	1.1	0.7	
Male	240	97.1	2.5	0.4	
White	1,795				$p < .05$
Female	1,415	94.4	4.2	1.4	
Male	380	90.5	7.9	1.6	
Do you discussion on how to talk with boyfriend/girlfriend about birth control?					
	N	Yes %	No %	No Opinion %	*Significance
African American	1,670				
Female	1,431	89.0	8.4	2.6	
Male	239	86.6	10.0	3.3	
White	1,779				$p < .001$
Female	1,404	80.4	15.3	4.3	
Male	375	66.9	28.5	4.5	

Do you support teaching about birth control methods during age-appropriate sex-related education?					
	N	Yes %	No %	No Opinion %	*Significance
African American	1,671				
Female	1,431	94.7	3.9	1.4	
Male	240	90.8	6.7	2.5	
White	1,788				$p < .001$
Female	1,411	88.6	8.6*	2.8	
Male	377	79.6	17.5*	2.9	
Do you support teaching where to obtain birth control products during age-appropriate sex-related education?					
	N	Yes %	No %	No Opinion %	*Significance
African American	1,670				$p = .001$
Female	1,430	89.2	7.8	3.0	
Male	240	80.8	12.5	6.7	
White	1,781				$p < .001$
Female	1,407	79.4	16.7	3.9	
Male	374	65.5	30.2	4.3	
Should correct condom use be demonstrated during age-appropriate sex-related education?					
	N	Yes %	No %	No Opinion %	*Significance
African American	1,660				$p < .01$
Female	1,425	83.0	13.1	3.9	
Male	235	74.9	20.0	5.1	
White	1,764				$p < .001$
Female	1,390	65.5	28.2	6.3	
Male	374	52.7	40.6	6.7	

Should classes be gender-segregated during age-appropriate sex-related education?					
	N	Yes %	No %	No Opinion %	*Significance
African American	1,675				
Female	1,434	45.9	49.1	5.0	
Male	241	48.5	46.1	5.4	
White	1,800				$p < .05$
Female	1,420	76.0	17.6	6.4	
Male	380	71.6	23.7	4.7	
How should student participation in age-appropriate sex-related education be determined?					
	N	Active Parental Consent[a] %	Passive Parental Consent[b] %	Not Sure/ Refused %	*Significance
African American	1,675				
Female	1,434	52.1	46.7	1.3	
Male	241	55.2	42.7	2.1	
White	1,800				$p < .001$
Female	1,420	54.7	43.8	1.5	
Male	380	65.0	34.5	0.06	

* $p < .05$. ** $p < .01$. *** $p < .001$.

[a] Parent should have to sign a form for child to participate in SRE.

[b] Child should be automatically enrolled in SRE unless parent provides written request that child not participate.

Binomial Regression Predicting Parental Support for Age-Appropriate SRE

In order to predict parental support for SRE, we devised six logistic regression models using five dependent variables (race/ethnicity, gender, age, education, and income). All five variables were significant predictors of parental support for SRE. Race/ethnicity was significant at $p < .001$ in models 1, 4 and 5 and significant at $p < .01$ in model 2. Gender was significant at $p < .001$ in models 1, 4 and 5 and significant at $p < .01$ in models 2 and 3. Age was significant at $p < .001$ in models 4 and 5 and significant at $p < .05$ in model 3. Education was significant at $p < .001$ in model 6, significant at $p < .01$ in model 5, and significant at $p < .05$ in model 6. Income was significant at $p < .001$ in models 3 through 6, significant

at $p < .01$ in models 4 and 5, and significant at $p < .05$ in model 1, 4 and 6. These results are discussed in detail below and included in Tables 3 and 4.

In model 1, we explored which dependent variables predicted parental support for implementing SRE in Mississippi. Among the 3,524 participants who responded to the question, "Should sex-related education be taught in Mississippi schools?," 94.1% responded "yes" (n = 3,315). As compared to white parents, African American parents were more likely to support SRE implementation in Mississippi (OR = 5.20, 95% CI = 3.29-8.22, $p < .001$). As compared to female parents, male parents were less likely to support SRE (OR = .46, 95% CI = .32-.66, $p < .001$). As compared to parents with incomes below $20,000, those with incomes of $50,000-74,999 were less likely to support SRE (OR = .68, 95% CI = .51-.91, $p < .05$).

In model 2, we explored which dependent variables predicted parental support for discussing the transmission and prevention of HIV/STIs during SRE. Among the 3,498 participants who responded to the question, "Do you support teaching about the transmission and prevention of HIV/STIs?" 94.9% responded "yes" (n = 3,321). As compared to white parents, African American parents were more likely to support this item (OR = 1.81, 95% CI = 1.24-2.64, $p < .01$). As compared to female parents, male parents were less likely to support this item (OR = .55, 95% CI = .37-.80, $p < .01$).

In model 3, we explored which dependent variables predicted parental support for discussing how to get tested for HIV/STIs during SRE. Among the 3,511 participants who responded to the question, "Do you support teaching about getting tested for HIV/STIs?," 93.2% responded "yes" (n =3,273). As compared to white parents, African American parents were more likely to support this item (OR = 2.80, 95% CI = 1.92-4.11, $p < .001$). As compared to female parents, male parents were less likely to support this item (OR = .62, 95% CI = .44-.87, $p < .01$). As compared to younger parents, older parents were less likely to support this item (OR = .98, 95% CI = .96-1.0, $p < .05$). As compared to parents with incomes below $20,000, those with incomes of $50,000-74,999 were less likely to support this item (OR = .38, 95% CI = .22-.66, $p < .001$) as were those with incomes of ≥ $75,000 (OR = .34, 95% CI = .20-.59, $p < .001$).

In model 4, we explored which dependent variables predicted parental support for discussing where to obtain birth control during SRE. Among the 3,440 participants who responded to the question, "Do you support teaching about where to obtain birth control products?," 85.3% responded "yes" (n = 2,933). As compared to white parents, African American parents were more likely to support this item (OR = 1.99, 95% CI = 1.56-2.54, $p < .001$).

As compared to female parents, male parents were less likely to support this item (OR = .55, 95% CI = .43-.70, $p < .001$). As compared to younger parents, older

parents were less likely to support this item (OR = .98, 95% CI = .97-.99, $p <$ .001).

As compared to parents with incomes below $20,000, those with incomes of $20,000-49,999 were less likely to support this item (OR = .70, 95% CI = .51-.96, $p < .05$), as were those with incomes of $50,000-74,999 (OR = .56, 95% CI = .38-.82, $p < .01$) and those with incomes of ≥ $75,000 (OR = .43, 95% CI = .30-.63, $p < .001$).

In model 5, we explored which dependent variables predicted parental support for demonstrating correct condom use during SRE. Among the 3,361 participants who responded to the question, "Do you support teaching correct condom use demonstrations?" 76.2% responded "yes" (n = 2,560). As compared to white parents, African American parents were more likely to support the item (OR = 2.14, 95% CI = 1.97-2.96, $p < .001$). As compared to female parents, male parents were less likely to support the item (OR = .64, 95% CI = .51-.81, $p <$ .001). As compared to younger parents, older parents were less likely to support the item (OR = .98, 95% CI = .97-.99, $p < .001$). As compared to parents with ≤ high school education, those who had ≥ 1 year of graduate school were less likely to support the item (OR = .61, 95% CI = .44-.83, $p < .01$). As compared to parents with incomes below $20,000, those with incomes of $50,000-74,999 were less likely to support this item (OR = .62, 95%, CI = .45-.85, $p < .01$) as were those with incomes of ≥ $75,000 (OR = .55, 95% CI = .40-.75, $p < .001$).

In model 6, we explored which dependent variables predicted parental support for segregating students by gender during SRE. Among the 3,399 participants who responded to the question, "Should classes be gender-segregated during sex-related education?," 64.5% responded "yes" (n = 2,194). As compared to white parents, African American parents were less likely to support this item (OR = 2.863, 95% CI = .22-.32, $p < .001$). As compared to parents with ≤ high school education, those who had 1-3 years of college were more likely to support this item (OR = 1.53, 95% CI = 1.25-1.89, $p < .001$), as were those who were college graduates (OR = 1.29, 95% CI = 1.0-1.66, $p < .05$) and those with ≥ 1 year of graduate school (OR =1.87, 95% CI =1.37-2.56, $p < .001$). As compared to parents with incomes below $20,000, those with incomes of $20,000-49,999 were more likely to support this item (OR = 1.26, 95% CI = 1.03-1.55, $p < .05$), as were those with incomes of $50,000-74,999 (OR = 1.47, 95% CI = 1.10-1.97, $p <$ .05), and those with incomes of ≥ $75,000 (OR = 1.83, 95% CI = 1.35-2.48, $p <$ .001).

Table 3. Binomial Regression Predicting Parental Support for Sex-Related Education in Mississippi Public Schools

At an age-appropriate grade level, in your opinion should:

	Model 1		**Model 2**		**Model 3**	
	Sex-related education be taught in Mississippi public schools		Classes be gender-segregated during sex-related education		Teaching correct condom use be demonstrated during sex-related education	
Predictors	B (SE)	OR (95% CI)	B (SE)	OR (95% CI)	B (SE)	OR (95% CI)
Intercept	2.76 (.23)		1.06 (.21)		1.38 (.13	
African American	1.65 (.23)***	5.20 (3.29-8.22)	-1.33 (.09)***	2.63 (.22-.32)	.88 (.10)***	2.41 (1.97-2.96)
Male	-.77 (.19)***	.46 (.32-.66)	- .14 (.11)	.87 (.69-1.08)	-.44 (.12)***	.64 (.51-.81)
Age (centered)	-.01 (.01)	.99 (.97-1.0)	-.00 (.00)	1.0 (.99-1.01)	-.02 (.01)***	.98 (.97-.99)
1-3 years of college	- .06 (.21)	.94 (.62-1.43)	.43 (.11)***	1.53 (1.25-1.89)	-.20 (.12)	.82 (.65-1.04)
College graduate	.16 (.27)	1.17 (.69-1.98)	.25 (.13)*	1.29 (1.0-1.66)	-.23 (.14)	.79 (.60-1.05)
≥1 year of graduate school	-.44 (.27)	.64 (.38-1.10)	.63 (.16)***	1.87 (1.37-2.56)	-.50 (.16)**	.61 (.44-.83)
Income: $20,000-49,999	-.09 (.25)	.91 (.55-1.50)	.24 (.10)*	1.26 (1.03-1.55)	-.17 (.13)	.84 (.65-1.09)
Income: $50,000-74,999	-.60 (.28)*	.55 (.32-.94)	.39 (.15)*	1.47 (1.10-1.97)	-.48 (.16)**	.62 (.45-.85)
Income: ≥$75,000	-.01 (.30)	.99 (.55-1.78)	.60 (.16)***	1.83 (1.35-2.48)	-.60 (.16)***	.55 (.40-.75)

Table 4. Binomial Regression Predicting Parental Support for Sex-Related Education in Mississippi Public Schools

At an age-appropriate grade level, do you support discussing:

	Model 4		**Model 5**		**Model 6**	
	Where to obtain birth control products during sex-related education		How to get tested for HIV/STIs during sex-related education		Discussing the transmission and prevention of HIV/STIs	
Predictors	B (SE)	OR (95% CI)	B (SE)	OR (95% CI)	B (SE)	OR (95% CI)
Intercept	2.11 (.15)		2.90 (.23)		3.21 (.24)	
African American	.69 (.12)***	1.99 (1.56-2.54)	1.03 (.20)***	2.81 (1.92-4.11)	.59 (.19)**	1.81 (1.24-2.64)
Male	-.60 (.13)***	.55 (.43-.70)	-.48 (.18)**	.62 (.44-.87)	-.61 (.20)**	.55 (.37-.80)
Age (centered)	-.02 (.01)***	.98 (.97-.99)	-.02 (.01)*	.98 (.96-1.0)	-.00 (.01)	1.0 (.98-1.01)
1-3 years of college	-.03 (.14)	.97 (.73-1.28)	.26 (.21)	1.29 (.86-1.93)	- .23 (.21)	.80 (.52-1.21)
College graduate	.04 (.17)	1.04 (.75-1.45)	.19 (.23)	1.21 (.76-1.91)	.06 (.27)	1.06 (.63-1.81)
≥1 year of graduate school	-.18 (.19)	.84 (.58-1.21)	.21 (.27)	1.24 (.73-2.09)	-.16 (.30)	.85 (.47-1.53)
Income: $20,000-49,999	-.36 (.16)*	.70 (.51-.96)	-.33 (.26)	.72 (.44-1.19)	-.43 (.25)	.65 (.40-1.05)
Income: $50,000-74,999	-.58 (.20)**	.56 (.38-.82)	-.97 (.28)***	.38 (.22-.66)	-.28 (.31)	.76 (.41-1.39)
Income: ≥$75,000	-.84 (.19)***	.43 (.30-.63)	-1.08 (.28)***	.34 (.20-.59)	-.37 (.31)	.69 (.38-1.25)

OR = odds ratio; CI = confidence interval.

* $p < .05$. ** $p < .01$. *** $p < .001$.

DISCUSSION

Our results indicate that an overwhelming majority of surveyed parents (92.1%) endorsed implementing age-appropriate SRE (i.e., abstinence-plus education) in Mississippi public schools. This support is noteworthy given that local school boards chose to adopt AOE in 52.3% of Mississippi's 155 public school districts (n = 81 districts) (MS Kids Count, 2013). In contrast, local school boards adopted abstinence-plus education in 74 school districts and a combination of AOE for younger students and abstinence-plus for older students in 3 school districts (MS Kids Count, 2013). As mandated by House Bill 999, each district's local school board was the decision-maker on whether schools in that district adopted AOE or abstinence-plus education. Our results suggest that the decision of just over 50% of local school boards to adopted AOE may not adequately reflect the desire of parents in those school districts for abstinence-plus education. Although the overwhelming majority of parents were in favor of this item, support varied somewhat across race/ethnicity, gender, and income. For example, African American parents were more likely to support implementing SRE as compared to white parents. In contrast, male parents were less likely to support SRE implementation as compared to female parents, as were parents with incomes of $50,000-74,999 as compared to parents with incomes below $20,000.

More than 90% of surveyed parents endorsed discussing the transmission and prevention of HIV/STIs during SRE, although support varied somewhat across race/ethnicity and gender. African American parents were more likely to support this item as compared to white parents, while male parents were less likely to support the item as compared to female parents. More than 90% of surveyed parents endorsed discussing how to get tested for HIV/STIs during SRE, although support varied somewhat across race/ethnicity, gender, age, and income. African American parents were more likely to support discussing how to get tested for HIV/STIs during SRE as compared to white parents. In contrast, male parents and parents who were older were less likely to support the item as compared to female parents and those who were younger. Parents with incomes $50,000 or higher were also less likely to support the item as compared to parents with incomes below $20,000.

Although AOE program guidelines "explicitly prohibit any discussion of contraceptives, except for failure rates" (Advocates for Youth, 2013, p. 1), more than 80% of surveyed parents endorsed discussing where to obtain birth control during SRE, which is consistent with other research on public opinion regarding sex education in US schools (Bleakley, Hennessy & Fishbein, 2006; Eisenberg et al, 2008; Ito et al, 2006, Tortolero et al, 2011). Support varied somewhat across race/ethnicity, gender, age, and income.

African American parents were more likely to support this item as compared to white parents. In contrast, male parents and parents who were older were less likely to support the item as compared to female parents and those who were younger. Parents with incomes of $20,000 or higher were also less likely to support this item as compared to parents with incomes below $20,000.

Condom use demonstrations during SRE are explicitly banned by House Bill 999, yet more than 70% of surveyed parents endorsed demonstrating correct condom use during SRE. Support varied somewhat across all five of our predictor variables. African American parents were more likely to support this item as compared to white parents. In contrast, male parents and

parents who were older were less likely to support the item as compared to female parents and those who were younger. In terms of education, only parents in the highest education bracket were less likely to support the item as compared to parents with ≤ high school education. Parents with incomes of $50,000 or higher were less likely to support this item as compared to parents with incomes below $20,000.

An additional mandate of House Bill 999 is that SRE classes are segregated by gender. More than 60% of surveyed parents endorsed gender-segregated SRE, although support varied somewhat across race/ethnicity, education, and income. African American parents were less likely to support this item as compared to white parents. In contrast, parents with 1 year of college or more were more likely to support this item as compared to parents with ≤ high school education. In addition, parents with incomes of $20,000 or higher more were more likely to support this item as compared to parents with incomes below $20,000.

When taken as a whole, these results suggest that—regardless of race/ethnicity or gender—surveyed parents reported overwhelming support for age-appropriate SRE in Mississippi public schools and that such sex education should include discussion of HIV/STI prevention, HIV/STI testing, and where to obtain birth control. Surveyed parents reported strong support for demonstrating correct condom use and they reported majority support for segregating students by gender during SRE. African American parents who were female were the most supportive of the first 5 items, while they were the least supportive of gender-segregated SRE. Given that African American youth in Mississippi are disproportionately at risk for teen pregnancy, teen childbearing, and STIs as compared to white youth (NCPTUP, 2013a; MSDH, 2011a; MSDH, 2011b; NCPTUP, 2013b; Ragsdale & Sutton, 2012), it is possible that African American parents in the present sample—and particularly African American mothers—were more likely to recognize the importance of comprehensive sex education for their children.

Limitations

The study's findings must be considered in light of its limitations and strengths. Consistent with the literature on sex-related research (Ragsdale, DiFrancesco & Pinkerton, 2006; Ragsdale et al, 2009) participants who were more comfortable discussing sexually sensitive topics may have been overrepresented in the sample. Consistent with similar telephone surveys among parents that focused on school-based sex education (Eisenberg et al, 2008; Ito et al, 2006; Lagus et al, 2011), female parents and those with more than four years of college were overrepresented in the present study. The sexually sensitive nature of the survey may have contributed to underrepresentation of male parents, and may be associated with fathers' lack of or discomfort with engaging in communication about sex with their children (Harris et al, 2013; Miller et al, 2013; Ragsdale et al, 2013; Wilson, Dalberth & Koo, 2010). Indeed, studies on parent-adolescent sexual communication have found that sexual communication is far more common with mothers (Harris et al, 2013; Ragsdale et al, 2013; Wilson, Dalberth & Koo, 2010) and that fathers report more discomfort (Miller et al, 2013; Wilson, Dalberth & Koo, 2010). In the present study, such discomfort may have contributed to fathers' reluctance to participate. Another contributor to male underrepresentation may be that females are often the primary caregivers of school-aged children and, therefore, may have been overrepresented in the original telephone database. Finally, our results must be interpreted with caution given that participant misreporting is common in interview-assisted surveys of a sensitive nature (Tourangeau & Yan, 2007).

In terms of strengths, this is the first state-level survey among a randomized sample of Mississippi parents of public school students to assess their opinions regarding abstinence-plus education. In contrast to similar studies in the United States (Eisenberg et al, 2008; Ito et al, 2006; Lagus et al, 2011), it is noteworthy that minority parents, those with less educational attainment, and those with lower income were adequately represented in the present study. For example, African Americans—who account for 37.3% of Mississippi's adult population—accounted for 48.2% of survey respondents. Although results may not be fully generalizable to parents across the nation or in other countries, our results are consistent with similar telephone surveys conducted among parents in Minnesota, North Carolina, and Texas to assess attitudes towards school-based sex education (Eisenberg et al, 2008; Ito et al, 2006; Lagus et al, 2011; Tortolero et al, 2011). Our results are also compelling in light of the fact that—although Mississippi has been identified as the fourth most politically conservative state in the nation (Gallup, 2013) — surveyed parents were overwhelming in support of age-appropriate SRE.

CONCLUSION

We believe that predicting parental support for SRE has important policy implications for Mississippi and other states that have been identified as politically conservative. For example, although local school boards in Mississippi voted in 2012 to adopt AOE in just over 50% of school districts, surveyed parents were overwhelming supportive of sex education topics well-aligned with comprehensive sex education. These findings are instructive for implementing evidence-based sex education in Mississippi, as they are reflective of national public preference for "broad sex education curriculum that stresses abstinence as the best way to avoid unintended pregnancy and sexually transmitted infections (STIs) but that also conveys complete and medically accurate information about contraception and condoms" (Advocates for Youth, 2007, p.1) (see also Bleakley, Hennessy & Fishbein, 2006; Eisenberg et al, 2008; Ito et al, 2006; Tortolero et al, 2011). Given that AOE has been implemented in over 50% of Mississippi school districts, we also recommend that future research should—as mandated by House Bill 999—compare findings from school districts that have adopted AOE versus abstinence-plus education in order to evaluate the effect of these two programs on teen pregnancy rates and dropout rates due to teen pregnancy at the local and state levels.

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