A THEORETICAL INVESTIGATION OF PUBLIC ATTITUDES TOWARD SEX EDUCATION

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Rates of teen pregnancy in the United States are significantly higher than those in most other industrialized nations. This is troubling in light of the consequences to teen mothers, their children, and society. Some suggest that teen pregnancies can be decreased by providing sex education in the public school system, while others believe that sex education is inappropriate for public school. Little research exists, however, on predictors of attitudes toward sex education, and most existing research is dated and lacks a theoretical framework. Guided by the seminal work of Ira L. Reiss, we examine the impact of labor shortages, religiosity, militarism, gender egalitarianism, regulation of sexuality, and a naturalistic view of sexuality on attitudes toward sex education. Results suggest that Hispanics, those with high levels of religiosity, and those who supported regulation of sexuality were significantly less likely to support sex education in public schools. Implications of the findings and directions for future research are discussed.

The issue of sex education in public schools has a long and complex history in the United States that has often been molded and directed by the social and political environments of the time (Rose 2005;
Donovan 1998). As Carter (2001, p. 214) discussed, “The history of sex education [in the U.S.] can be seen as the story of shifting strategies aimed at discouraging people from having sex outside of marriage.” Indeed, parents, educators and policy makers have long debated whether public schools are an appropriate venue for sex education. Many believe that providing sex education in the public school system is necessary in order to ensure that adolescents receive correct information about sex and sexuality, while others argue that public school is an inappropriate place for adolescents to learn about such topics (Rose 2005).

One of the primary arguments in support of sex education in public schools is the notion that it may prevent teen pregnancies and sexually transmitted diseases. The United States leads most industrialized nations in teen pregnancies and births (UNICEF 2001), and researchers estimate that teenagers comprise 20 to 25 percent of reported STD cases (Forsyth 2000). Further, studies show that those aged 13 to 21 make up between 13 to 25 percent of newly reported HIV infections in the United States (CDC 2005; Chabon and Futterman 1999). Supporters of sex education assert that providing sex education in public schools will reduce teen pregnancies, teen births, and sexually transmitted diseases by providing accurate information about contraception and STD prevention (Donovan 1998).

On the other hand, those who oppose sex education in public schools argue that it may lead to an increase in sexual behavior among teenagers. Further, they warn that it could lead to higher rates of illegitimacy and sexual neuroses (Campos 2002; Donovan 1998). There is also disagreement about timing and content of sex education curricula. In other words, there is debate regarding when sex education should begin (i.e., what grade/age) and what topics should be covered. Some argue that sex education programs should teach abstinence as the only method of birth control and STD prevention (Kirby 2002), while others believe that teenagers need information about contraception in order to protect themselves from pregnancy and sexually transmitted diseases.

In short, sex education in public schools is a controversial issue. We know that support is generally high for such programs. We have little information, however, on predictors of attitudes toward sex education in public schools among the general public as no studies have been conducted on the topic since the early 1980s (Richardson and Cranston 1981). The present study aims to fill a void in the literature by examining predictors of support for sex education in public schools. This issue is important for several reasons. First, public
opinion is a powerful determinant of public policy. Given the ideological and political changes in society over the past 25 years, revisiting predictors of support for sex education in public schools is important. Further, previous research on the topic has not been guided by theory (Measor et al. 2000) and has lacked methodological sophistication. The present study, guided by Reiss’s (1980) theory of sexuality, examines the impact of religiosity, militarism, labor shortages, attitudes toward gender egalitarianism, attitudes toward regulation of sexuality, and views of sexuality as natural on attitudes toward sex education in public schools. This study makes an important theoretical contribution, as it is the first to evaluate Reiss’s theory in its entirety. Herein, we provide a brief review of the literature on sex education and outline Reiss’s theory of sexuality.

LITERATURE REVIEW

The movement toward sex education in public schools began in the 1920s. As early as 1924, some scholars were arguing that sex education should be integrated into existing public school curricula (Bigelow 1924; Campos 2002). The evolution of sex education continued through the 1960s when the Sex Education and Information Council of the United States (SEICUS) was formed to promote sex education in public schools in an effort to provide youth with the necessary knowledge and skills to make informed decisions about sex (Campos 2002). Support for sex education was also seen among school administrators during this period. Johnson and Schutt (1966) found that among 18 superintendents and 67 school board members in Maryland, approximately 84 percent supported sex education in public schools.

By the end of the 1960s, however, groups that opposed sex education in public schools began to organize. Groups such as the John Birch Society and Christian Crusade against Communism rallied against both SIECUS and schools that had sex education programs (Campos 2002). The director of Christian Crusade stated that SIECUS was a “communist front apparatus designed to erode the moral fiber of youth” (Toohey 1969, p. 70). It was believed by these opponents that sex education was detrimental to youth and that it produced higher rates of illegitimacy, promiscuity, and sexual neuroses (Campos 2002; Donovan 1998).

The backlash against sex education continued into the 1970s when 20 states passed legislation to either restrict or abolish sex education in public schools (Donovan 1998). By the end of the decade, only
Kentucky, Maryland, New Jersey, and the District of Colombia required sex education in their public schools (Kenny and Alexander 1980). Another shift occurred, however, with the onset of the acquired immune deficiency syndrome (AIDS) in the 1980s (Campos 2002; Donavon 1998). In fact, Surgeon General C. Everett Koop (1986, p. 61) argued that, “Education concerning AIDS must start at the lowest grade level possible as part of any health and hygiene program... There is now no doubt that we need sex education in schools...”

Predicting Support for Sex Education

Public support for sex education in public schools is currently high. In fact, a 1999 Gallop Poll found that 60 percent of adults supported mandatory sex education programs in schools and 32 percent supported sex education but believed that it should not be mandatory (Crabtree 2005). We have little information, however, on characteristics of those who support sex education in public schools as no studies among the general public have been conducted since the early 1980s (Richardson and Cranston 1981). Below, we provide an overview of three studies that have examined the issue in the past.

Snyder and Spreitzer (1976) used data from the General Social Survey (GSS) to examine correlates of attitudes toward sex education. They found that individuals who were older, had lower levels of education and lower occupational levels held less favorable attitudes toward sex education. Additionally, individuals who were politically liberal, less religious, and never married had more favorable attitudes toward sex education. Also using the GSS, Mahoney (1979) conducted a discriminate analysis of characteristics that predicted an individual’s stance on sex education in public schools. He found that those who opposed sex education in public schools differed from those who supported it in the areas of traditional orientation toward the family, traditional views regarding women’s roles, and traditional attitudes toward premarital sex. Finally, Richardson and Cranston (1981) used the GSS to assess attitudes toward sex education. Their analyses revealed that attitudes toward premarital sex, attitudes toward race integration of schools, those from farm/small town origins, level of supervision at work, and low educational attainment were most predictive of attitudes toward sex education. Like Mahoney (1979), Richardson and Cranston (1981) found that attitudes toward premarital sex were a significant predictor of attitudes toward sex education in public schools. None of these studies, however, used a theoretical perspective to guide their analyses.
THEORETICAL FRAMEWORK

It has been argued that the sexuality research literature lacks theory, especially from a sociological perspective (Reiss 1986). According to Weis (1998, p. 1), “Compared to many other areas of scientific inquiry, it is fair to suggest that sexual theory is still in its infancy—both because relatively little sexuality research is oriented to testing theoretical hypotheses and because few empirically-tested theories with conceptual precision have yet to emerge” (also see Ruppel 1994). In particular, the research on sex education is largely “untheorized” (Measor et al. 2000, p. 2).

Ira L. Reiss (1980) constructed a theory to explain attitudes toward sexuality based on his research in Sweden and the United States. Reiss (1980) discussed how Sweden leads the West, including the United States, in gender role equality and sexual permissiveness. This is seen especially in the area of premarital sex. Reiss described Swedes as being “less obsessive and compulsive about premarital sex” (Reiss 2006, p. 77). Further, Reiss (1980, p. 202) discussed that, in Sweden, “The schools have a long-standing program of sex education . . . [and] teach the fundamentals of contraception to the early teenagers.”

In his Swedish research, Reiss identified a number of sociocultural factors that “account for people’s perception of gender roles which further influences sexual attitudes and behavior” (Wang and Buffalo 2004, p. 94). Reiss (1980) proposed that low levels of religiosity, low levels of militarism, and labor shortages all contribute to greater gender equality. These structural level characteristics, combined with high levels of gender egalitarianism, few institutional regulations toward sexuality, and a view of sex as a natural act, contribute to greater sexual permissiveness. Reiss’s (1980, p. 216) goal was to “put forth propositions to stimulate future research.”

In the present study, we investigate sociocultural determinants of attitudes toward sex education using Reiss’s theory of sexuality. It is important to revisit this issue, given the key ideological and political changes that have occurred in American society since the last study was conducted on attitudes toward sex education over 25 years ago.¹ For example, society has become more economically stable,

¹Reiss (2006) points to a number of changes that may affect views toward sexuality, including the onset of AIDS, the proliferation of “right wing religious groups” (Reiss 2006, p. 210), and the Bush Administration’s opposition to funding for sex research. Similarly, the fact that the Supreme Court recently held that a ban on partial birth abortion does not violate a women’s right to choose is seen by some as a move toward more conservative policies toward sexuality and women’s rights.
women have gained more equal ground in terms of employment and salaries, and the United States has developed more liberal attitudes toward sexuality (Reiss 2006). Indeed, Reiss (2006, p. 129) argued, “change occurs in sexual customs over time, particularly in modern complex societies.” Further, he recognized that American society was developing more permissive attitudes toward sexuality in the 1960s and 1970s and predicted that the trend would continue. As a consequence of such a trend, Reiss would predict more permissive attitudes toward sex education.

While Reiss’s original theoretical formulation was in a crosscultural context, he argued that it would be “worthwhile to see just how well these factors (labor shortages, religiosity, militarism) would predict the degree of equality in . . . a particular culture” (Reiss 1980, p. 195). Weinberg et al. (2000, p. 44) reiterated that Reiss’s theory is applicable at the individual level, stating that, “All of these characteristics are said to exist in individual attitudes as well as in institutional practices.” Aspects of Reiss’s theory of sexuality have been used to explain attitudes toward abortion, attitudes toward sexual permissiveness, and attitudes toward extramarital sexual permissiveness (Reiss et al. 1980; Wang and Buffalo 2004; Weinberg et al. 2000). However, Reiss’s theory has not yet been fully tested (Weinberg et al. 2000). Below, we outline the concepts of Reiss’s theory and their application to attitudes toward sex education.

Religiosity

The first variable Reiss (1980) hypothesized to be predictive of sexual attitudes is religiosity. In Sweden, the church has little control or cultural influence, and according to Reiss (1980), this makes it easier for Swedish culture to reject the unequal and segregated views propagated by organized religion (Weinberg et al. 2000). He discussed how organized religion is a more prominent fixture in Western society, and how traditional gender ideals, where the man is the breadwinner and the woman takes care of the home, are promoted through organized religion. Reiss (1980) argued that in societies where organized religion has more influence and power, the traditional views of gender roles will be harder to reject and overcome.

Consistent with Reiss’s proposition, DeLameter (1989) discussed how religion, and Christianity in particular, has a significant influence on views toward sexuality in the United States. DeLameter

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2According to Reiss (2006), his theory is more applicable to attitudes rather than actual behaviors.
(1989, p. 264) stated, “Most religions in the United States continue to espouse a procreational, somewhat ascetic, and pro-family perspective. Thus, persons who belong to or attend a Christian church are regularly exposed to such a perspective, learn the associated norms, and are likely to adhere to them.” Researchers have consistently found an inverse relationship between religiosity and attitudes toward nonmarital sexuality, leading Cochran and Beeghley (1991) to qualify the relationship as an “empirical generalization.” Additionally, Wang and Buffalo (2004) used Reiss’s theory to predict attitudes toward abortion and found that fundamentalist beliefs significantly predicted negative attitudes toward abortion. Reiss’s theory implies that those who are more religious will be less likely to support sex education in public schools.

**Militarism**

Reiss (1980) argued that higher levels of militarism in society often correlate with higher levels of male dominance which leads to greater gender inequality and lower levels of sexual permissiveness. Reiss explained that the level of militarism in Sweden is very low, evidenced by their noninvolvement in wars since 1809 and low levels of government spending on the military. In contrast, a large portion of the national budget in the United States is used to fund the military, and, since 2001, defense spending, not including funds for homeland security, has risen by 40 percent. In fact, the total amount spent on defense for 2006 was 410.7 billion dollars (Office of Management and Budget 2007). Given the United States’ recent military involvement and focus on homeland security, examining the impact of this aspect of Reiss’s theory is particularly timely. At the individual level, Reiss’s theory suggests that those who show higher levels of support for the military will be less likely to endorse gender equality and, therefore, less likely to support sex education in public schools.

**Labor Shortages**

Reiss discussed the role of labor shortages in the progression toward gender equality and sexual permissiveness. In Sweden, for example, the labor shortage was a result of a number of factors, including the mass migration to America in the late nineteenth century, the expansion resulting from industrialization, traditionally low birth rates, and a high proportion of individuals who never marry (Reiss
1980). Because of these factors, women had more opportunities to enter the labor force. As a result, women were given greater economic opportunities which led to greater gender equality. Reiss (1980) argued that increased gender equality as a result of labor shortages would lead to more permissive attitudes toward sexuality. Thus, at the individual level, Reiss’s theory implies that those who perceive labor shortages will be more likely to support sex education.

**Gender Egalitarianism**

Next, Reiss (1980) pointed to gender equality in other social institutions, such as the legal system, as a predictor of sexual attitudes. Reiss (1980) discussed how laws were passed in Sweden between 1915 and 1920 that granted more rights to women by revoking a husband’s guardianship status over his wife and allowing for mutual consent divorce. By revoking these laws, women were given greater power and control over their own lives, and, therefore, Reiss argued that higher levels of gender equality would result in higher levels of sexual permissiveness.

That greater gender equality and empowerment of women leads to increased sexual permissiveness is also supported by feminist literature. In her account of the sexual revolution, Rubin (1990) discussed how feminism and the advancements in gender equality have led to more liberal views toward sexual behavior. Reiss’s theory implies that those who support gender equality will be more likely to support sex education in public schools.

**Regulation of Sexuality**

Reiss’s theory also includes sexual regulation as a predictor of sexual permissiveness. Swedish law has little in the way of regulations governing sexual behavior, with the exception of setting age of consent (age 15) and laws forbidding incest (Reiss 1980). In contrast to the United States, Sweden has not traditionally had laws against prostitution, seeing it as a private arrangement.³ This lack of regulation stems from the intense sense of privacy associated with sexual behavior in Sweden. While privacy is valued in the United States, sexuality is still seen as an area that the government can intervene via law (Reiss 1980).

³They have recently passed a law that criminalizes the customer of the prostitute, but not the prostitute (Weinberg et al. 2000).
In a study replicating Reiss’s work, Weinberg and colleagues (2000) used measures associated with legal restrictions on abortion, homosexuality, and pornography to operationalize the concept of regulation of sexuality. Consistent with Reiss’s theory, they found that nonregulatory views of sexuality, combined with religiosity, gender egalitarianism, and a naturalistic view of sexuality, influenced attitudes toward sexual permissiveness. Reiss’s theory suggests that those who support regulations governing sexual behavior will be less supportive of sex education.

**Naturalistic View of Sexuality**

The final concept Reiss presented is the idea that sex is a natural aspect of life. Reiss (1980, p. 200) discussed how, in Sweden, it is “understood that if a couple gets to like each other, they will naturally have intercourse.” According to Reiss, it is this acceptance of sexuality that leads to greater sexual permissiveness. The United States, unlike Sweden, has historically held the belief that sex is simply a means of propagating, and it is an impulse that must be controlled. However, Reiss (2006) observed that the United States has seen a trend toward sexual permissiveness (beginning in the 1960s and 1970s) and predicted that this trend would continue. Reiss’s theory implies that those who believe that sex is a natural act will be more supportive of sex education programs.

**HYPOTHESES**

Based on Reiss’s theory and previous research on attitudes toward sex education (e.g., Mahoney 1979; Richardson and Cranston 1981; Snyder and Spreitzer 1976), we examine which characteristics distinguish individuals who support sex education in public schools from those who do not support sex education. We expect the following with regard to attitudes toward sex education in public schools:

- **Hypothesis 1**: Individuals with higher levels of religiosity will be less supportive of sex education in public schools.
- **Hypothesis 2**: Individuals who support higher levels of militarism will be less supportive of sex education in public schools.
- **Hypothesis 3**: Individuals who perceive labor shortages will be more supportive of sex education in public schools.
- **Hypothesis 4**: Individuals who hold traditional attitudes toward gender roles will be less supportive of sex education in public schools.
Hypothesis 5: Individuals who support government regulation of sexuality will be less supportive of sex education in public schools.

Hypothesis 6: Individuals with a more naturalistic view of sexuality will be more supportive of sex education in public schools.

DATA AND METHODS

The data used in this study came from the 2006 GSS that is administered and compiled by the National Opinion Research Center (NORC). The survey employs a national probability sample of English- and Spanish-speaking, noninstitutionalized individuals living in the United States who are at least 18 years of age. Additionally, a subsample of nonrespondents was utilized to reduce possible biases resulting from non-response (Davis et al. 2007). The data were collected between January and June of 2006 using both face-to-face interviews and computer assisted personal interviews that lasted, on average, 90 minutes (Roper Center 2007).

The full sample consisted of 4,510 respondents; however, due to the rotation and double sample design employed by NORC, respondents were not asked every question included in the survey. Permanent items, such as demographic variables, were asked on every version of the survey, and the remaining questions were rotated in such a way that at least two-thirds of the sample received a survey containing any particular question (Davis et al. 2007). Due to this rotation of questions, the sample for this study contained 300 respondents.

Dependent Variable

The dependent variable examined in this study was attitudes toward sex education in public schools. The variable was measured by asking the respondents “Would you be for or against sex education in the public schools?” It is dichotomous (support = 1, opposed = 0), so logistic regression was employed.

Independent Variables

Based on the concepts presented in Reiss’s (1980) theory, a number of theoretical variables were assessed including religiosity, militarism, labor shortages, gender egalitarianism, regulation of sexuality, and naturalistic view of sexuality.
Religiosity
Two variables were used to measure religiosity. Based on the work of other researchers who have tested Reiss’s hypotheses, religiosity was measured by both the level of fundamentalism and the frequency of church attendance (Reiss et al. 1980; Wang and Buffalo 2004; Weinberg et al. 2000). The first variable measured the fundamentalism of the respondent’s religion. This variable is dichotomous (1 = fundamentalist, 0 = not fundamentalist). The second question measured the respondent’s attendance at religious services. The question asked the respondent “How often do you attend religious services?” This is an ordinal variable with values ranging from 0 = “never” to 8 = “more than once a week.”

Militarism
As a proxy measure of militarism, respondents were asked “Are we spending too much, too little, or about right on the military, arms- ments, and defense?” The response categories were coded as 1 = “too little,” 2 = “about right,” and 3 = “too much.”

Labor Shortages
As a proxy measure of labor shortages, the following question was used: “About how easy would it be for you to find a job with another employer with approximately the same income and fringe benefits you now have? Would you say very easy, somewhat easy, or not easy at all?” The variable was recoded into a dichotomous variable by combining “very easy” and “somewhat easy” into one category (1 = easy, 0 = not easy).

Gender Egalitarianism
An additive scale was constructed to measure traditional attitudes toward gender roles. Respondents were asked to indicate their level of agreement or disagreement with the following statements: “A working mother can establish just as warm and secure relationship with her children as a mother who does not work,” “It is much better for everyone involved if the man is the achiever outside the home and the woman takes care of the home and family,” and “A preschool

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4 If a respondent answered that it would be easy to find another job, it implies that there is a labor shortage; if he or she answered that it would not be easy to find another job, it indicates that there is not a labor shortage.

5 We recognize that this is a weak measure of labor shortages because it does not directly measure job availability or the state of the economy. Rather, it measures an individual’s personal perception of the ease/difficulty of finding another job, which may be related to type of occupation, educational attainment, or another variable not captured here.
child is likely to suffer if his or her mother works.” A four-item Likert-type scale was used (strongly agree, agree, disagree, strongly disagree) and the responses were coded so that higher scores on the scale indicated greater support for gender egalitarianism. This measurement is consistent with those used in prior research (see Reiss et al. 1980). The scores ranged from 3, indicating low levels of support for gender egalitarianism, to 12, indicating high levels of support for gender egalitarianism. The items loaded .60 or above on the factor in a factor analysis. Finally, three dummy variables were constructed representing “low,” “moderate,” and “high” support for gender egalitarianism, with “moderate” serving as the reference group.

**Regulation of Sexuality**
Reiss’s concept of regulatory views toward sexuality was examined by looking at the level of support given to institutionally established laws and regulations that intervene in the sexual affairs of individuals. The question measured attitudes toward the right to distribute pornographic material. The question asked, “Which of these statements comes closest to your feelings about pornography?” The response categories were “there should be laws against the distribution of pornography whatever the age,” “there should be laws against the distribution of pornography to persons under 18,” and “there should be no laws forbidding the distribution of pornography.” The response categories were recoded into a dichotomous variable where 0 indicated pornography should be illegal to all, and 1 indicated that it should be legal for all or only those 18 and older. This question is consistent with the measure used in a previous study of Reiss’s theory (Weinberg et al. 2000).

**Naturalistic View of Sexuality**
To measure the concept of a naturalistic view of sexuality, a question asking the respondent’s attitudes toward premarital sex was included. The question asked the respondent, “if a man and woman have sex relations before marriage, do you think it is always wrong, almost always wrong, wrong only sometimes, or not wrong at all?” It was coded as a dichotomous variable with 0 indicating “wrong” and 1 indicating “not wrong.”

**Control Variables**
Control variables were examined to gain an idea of the sample characteristics, as well as to see if these variables contributed to the respondent’s attitudes toward sex education. These variables include
age, gender, marital status, race, education level, total family income, and political views. Age was a continuous variable, measured in actual years, and gender was coded as 0 = male and 1 = female. Marital status was coded as 0 = never married and 1 = is/has been married (includes married, widowed, divorced, and separated). Race was coded into a series of three dummy variables with variables for White, Black/African-American, and Hispanic, with White serving as the reference group. Political views were coded into a series of three dummy variables to represent liberal, moderate, and conservative, with moderate serving as the reference group.

Education is an ordinal variable ranging from 0 = “less than high school” to 4 = “graduate degree.” Respondent’s income was measured by asking, “In which of these groups did your total family income, from all sources, fall last year—2005—before taxes, that is?” This is an ordinal measure where 1 = “$24,999 or less,” 2 = “$25,000–$49,999,” 3 = “$50,000–$74,999,” and 4 = “$75,000 or more.”

Analytic Plan

A series of models is presented to discern the independent impact of each of Reiss’s theoretical “groupings” on attitudes toward sex education. First, we estimated a baseline model by regressing attitudes toward sex education on control variables. In the second model, the structural level variables (religiosity, militarism, and labor shortages) were added to the baseline model to assess their impact on attitudes toward sex education. The third model included only the control variables and the second level variables (gender egalitarianism, regulation of sexuality, and naturalistic view of sexuality). Finally, a full model is presented, which includes the control variables and all of Reiss’s theoretical variables, to determine predictors of attitudes toward sex education.

RESULTS

Descriptive Statistics

The results of the descriptive statistics are displayed in Table 1. The age of the respondents ranged from 18 to 79 with a mean age of approximately 41 years. The distribution of the sample with regard to gender was approximately equal with females comprising 51 percent of the sample and males comprising 49 percent. A large portion
of the sample (72 percent) was either currently married or had previously been married (including widowed, separated, or divorced) while 28 percent had never married. The sample was largely White (69 percent) with Black/African-American (17 percent) and Hispanic (10.3 percent) substantially represented as well. Approximately 56 percent of the sample had a high school degree or less, and 44 percent had at least a two-year college degree. The median annual income was between $50,000 and $74,999. The majority of the sample identified themselves as having moderate political views (38 percent) while 32 percent identified themselves as conservative and 30 percent identified themselves as liberal.

When the demographics of the full sample of 4,510 were compared to the study sample of 300, two significant differences were seen. First, the sample used in this study contained more respondents who were college-educated, with 44 percent of the sample reporting

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Table 1. Descriptive statistics of study variables (n = 300)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>40.98</td>
<td>12.24</td>
</tr>
<tr>
<td>Gender (1 = female)</td>
<td>.51</td>
<td>.50</td>
</tr>
<tr>
<td>Marital status (1 = married)</td>
<td>.72</td>
<td>.45</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>.69</td>
<td>.47</td>
</tr>
<tr>
<td>Hispanic</td>
<td>.10</td>
<td>.31</td>
</tr>
<tr>
<td>Black/African American</td>
<td>.17</td>
<td>.38</td>
</tr>
<tr>
<td>Education</td>
<td>1.74</td>
<td>1.19</td>
</tr>
<tr>
<td>Income</td>
<td>2.61</td>
<td>1.16</td>
</tr>
<tr>
<td>Political views</td>
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<td></td>
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<tr>
<td>Liberal</td>
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<td>.46</td>
</tr>
<tr>
<td>Moderate</td>
<td>.38</td>
<td>.49</td>
</tr>
<tr>
<td>Conservative</td>
<td>.32</td>
<td>.47</td>
</tr>
<tr>
<td>Fundamentalism (1 = fundamentalist)</td>
<td>.29</td>
<td>.45</td>
</tr>
<tr>
<td>Church attendance</td>
<td>3.22</td>
<td>2.81</td>
</tr>
<tr>
<td>Military funding</td>
<td>2.21</td>
<td>.79</td>
</tr>
<tr>
<td>Ease of finding job (1 = easy)</td>
<td>.65</td>
<td>.48</td>
</tr>
<tr>
<td>Gender equality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low support</td>
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<td>.28</td>
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<tr>
<td>Moderate support</td>
<td>.65</td>
<td>.48</td>
</tr>
<tr>
<td>High support</td>
<td>.27</td>
<td>.44</td>
</tr>
<tr>
<td>Regulation of pornography (1 = legal)</td>
<td>.64</td>
<td>.48</td>
</tr>
<tr>
<td>Attitude toward premarital sex (1 = not wrong)</td>
<td>.68</td>
<td>.47</td>
</tr>
<tr>
<td>Attitude toward sex education (1 = support)</td>
<td>.91</td>
<td>.29</td>
</tr>
</tbody>
</table>
at least a two-year degree, compared to the full sample which had 34 percent reporting at least a two-year degree. Secondly, a difference in age between the two samples was observed with a mean age of 47.35 for the full sample and a mean age of 40.98 for the sample used in the present study. The remaining demographic variables did not show significant differences between the two samples.

Now looking at the variables suggested by Reiss’s theory, about 29 percent of our sample identified themselves as fundamentalist. In terms of how often respondents attend religious services, almost 29 percent of the sample stated that they never attend religious services, 29 percent attend between less than once per year and several times per year, and about 42 percent attend at least once per month. With regards to military spending, 23 percent stated that the amount spent on the military was too little, 32 percent felt it was about right, and 45 percent stated that it was too much. A large portion of the sample (65 percent) also indicated that finding a job with pay and benefits equal to their current job would be easy. The majority of the sample reported either moderate or high support for gender equality, comprising 65 percent and 27 percent of the sample, respectively. Over half of the sample (64 percent) believed that pornography should be legal. Sixty-eight percent believed that premarital sex was not wrong, while 32 percent believed it was wrong. Finally, the descriptive statistics indicated that a large majority of the sample (91 percent) supported sex education in public schools.

Multivariate Analyses

Model one (Table 2) shows the results of the regression model assessing the impact of the control variables on attitudes toward sex education. Overall, this model explained approximately 20 percent of the variance in attitudes toward sex education ($R^2 = .199$). Results indicated that gender, race, and political views significantly influenced attitudes toward sex education. In particular, females, Hispanics, and those with politically conservative views were significantly less likely to support sex education in public schools compared to males, whites, and political moderates.

Model two (Table 2) shows the regression of the control variables and the first level variables from Reiss’s theory (religiosity, militarism, and labor shortages) on attitudes toward sex education. This model explained approximately 34.1 percent of the variance in attitudes toward sex education ($R^2 = .341$). Additionally, the deviance
statistic for model two is 29.56, indicating the additional measures provide a significant improvement over model one.\(^6\)

Gender, race, and political views remain statistically significant in this model. Females, Hispanics, and conservatives were less likely to support sex education compared to males, whites, and moderates. Additionally, church attendance and perception of ease of finding a job significantly influenced attitudes toward sex education. The more often respondents reported attending church, the less likely they were to support sex education. Further, those that felt that it would be

\(^6\)While it is common to compare \(R^2\) values across models for linear regression, such comparisons are less meaningful for logistic regression. For this reason, we generated a deviance statistic (or likelihood ratio test) in order to compare subsequent, more complex models to the first model. This statistic is calculated by subtracting the \(-2\log\) likelihood of the more complex model from that of the simpler model. The difference follows the chi-square distribution, where degree of freedom is equal to the additional parameters in the more complex model (Agresti and Finlay 1997).
difficult to find a replacement job were less likely to support sex education compared to those who felt that it would be easy to find a replacement job. In fact, those who felt that finding a replacement job would not be easy were about three times more likely to oppose sex education than those who felt finding a job would be easy. These findings show support for Reiss’s theory in that religiosity and labor shortages influenced attitudes toward sex education. Militarism, however, was not a significant predictor of attitudes toward sex education in this model.

In model three (Table 2), we estimate the impact of the control variables and the second level of Reiss’s theoretical constructs (gender egalitarianism, regulation of sexuality, and a naturalistic view of sexuality) on attitudes toward sex education. This model explained about 31 percent of the variance in attitudes toward sex education ($R^2 = .309$), and the deviance statistic of 22.99 shows that this model is also a significant improvement over model one. Being Hispanic and politically conservative remain significant, with Hispanics and conservatives being significantly less likely to support sex education compared to Whites and moderates. Being Black/African-American achieves significance in model three, which was not observed in either of the first two models. When compared to White respondents, African-American respondents were less likely to support sex education in public schools. Additionally, we found that attitudes toward the regulation of pornography and premarital sex significantly influenced attitudes toward sex education. Those who felt that pornography should be legal and those who condoned premarital sex were more likely to support sex education in public schools compared to their counterparts. In fact, respondents who believed pornography should be legal were 3.2 times more likely to support sex education compared to those who did not believe it should be legal. Additionally, respondents who condoned premarital sex were about 3.6 times more likely to support sex education compared to those who did not condone premarital sex. These findings support Reiss’s theory in that regulation of sexuality and a naturalistic view of sexuality significantly impacted attitudes toward sex education. Support, however, was not found in this model for the proposition that those who support gender egalitarianism would be more likely to support sex education.

Model four (Table 2) illustrates the full regression model estimating the impact of the control variables and the first and second levels of Reiss’s theoretical measures on attitudes toward sex education. This model explained about 38 percent of the variance observed in attitudes toward sex education ($R^2 = .381$). The deviance statistic
comparing the full model to model one is 47.17, showing that the full model makes a significant improvement over model one.

Being Hispanic and frequency of church attendance remain significant in the final model, with Hispanics and those who attend church more often being significantly less likely to support sex education than Whites and those who attend church infrequently. Gender, political views, and perceptions of labor shortages lose their significance in the final model. Additionally, we found that attitudes toward the regulation of pornography significantly influenced attitudes toward sex education, controlling for all other variables. Those who felt pornography should be legal were more likely to support sex education in public schools compared to their counterparts. In fact, respondents who believed pornography should be legal were 3.3 times more likely to support sex education compared to those who did not believe it should be legal. These findings support Reiss's theory in that regulation of sexuality and religiosity significantly impacted attitudes toward sex education. Again, support was not found in this model for the proposition that those who support gender egalitarianism would be more likely to support sex education.

Overall, the conclusion can be made that Hispanics, those who attended church often, and those who believed pornography should be illegal were less likely to support sex education in public schools. These findings were consistent across all models. Very few demographic variables showed significance in the multivariate models, and only being Hispanic showed a significant impact in all three models. While gender had a significant effect in models one and two, this was not observed in models three and four. Moreover, being Black/African American achieved significance only in model three but lost its significance in the final model. Perhaps the relationship between gender and attitudes toward sex education observed in the first two models was better explained by attitudes toward pornography, while the relationship between being Black and attitudes toward sex education may have been mediated by religiosity. Similarly, our measure for naturalistic views on sexuality (attitudes toward premarital sex) was only significant in model three. Again, this influence may be masked by the religiosity measures reintroduced in model four. Political views were also found to be significant predictors of attitudes toward sex education in models one through three; however, the

7It should be noted that the final model loses some statistical power due to decreased sample size (missing data) and this could explain the lack of statistical significance of some of the variables.
relationship disappeared in model four, suggesting that the theoretical variables are better predictors of attitudes than political views.

**DISCUSSION**

The present study analyzed predictors of attitudes toward sex education using a theoretical framework formulated by Ira L. Reiss. Reiss (1980) proposed that low levels of religiosity, low levels of militarism, and labor shortages lead to higher levels of gender egalitarianism. Gender egalitarianism, coupled with few institutionalized regulations of sexuality and the view of sex as a natural act leads to a society that is more sexually permissive. Reiss’s theory implies that those who are more sexually permissive will also be more supportive of sex education. Overall, we found limited support for Reiss’s theory.

Religiosity, measured by church attendance, was found to consistently predict attitudes toward sex education in this study, which is consistent with Reiss’s theory and previous research (e.g., Reiss et al. 1980; Wang and Buffalo 2004; Weinberg et al. 2000). Regulation of sexuality, measured by the endorsement of laws against pornography, was also significant in the final model. Those who supported regulations on sexual behavior were less likely to support sex education in public schools. Other interesting findings emerged as well. In model two, labor shortages predicted attitudes toward sex education; those who perceived labor shortages were more likely to support sex education. In model three, attitudes toward premarital sex (measuring naturalistic view toward sexuality) significantly influenced attitudes toward sex education in the predicted direction. Those who believed that premarital sex was “not wrong” were more likely to support sex education. However, labor shortages and views toward premarital sex were not significant in the final model, and militarism and gender egalitarianism, as operationalized in this study, did not significantly predict attitudes toward sex education in any of the models. Weinberg and colleagues (2000) also failed to find support for gender egalitarianism. It is likely that views toward gender equality are explained by religiosity.

While gender and political beliefs influenced attitudes toward sex education in several of the models, these relationships were not found in the final model, which indicates that these relationships were explained by other theoretical concepts. Hispanics, however, were consistently less likely to support sex education across all models. The finding that Hispanics hold views regarding sex education that
differ significantly from Whites may be due to the Hispanic-Catholic link, whereby a large portion of the Hispanic population has strong ties to the Catholic Church.

The results showed some inconsistencies with previous research. For example, Mahoney found that those who opposed sex education held more traditional views toward family, women’s roles, and premarital sex. Richardson and Cranston (1981) also found that attitudes toward premarital sex were a significant predictor of sex education in schools. The present study found that neither attitudes toward gender equality nor attitudes toward premarital sex consistently predicted attitudes toward sex education. It is interesting to note, however, that attitudes toward premarital sex were significant when the variables measuring religiosity, militarism, and labor shortages were excluded from the model. This does not necessarily contradict Reiss’s theory; in fact, Reiss states that religiosity predicts a naturalistic view of sexuality, which would then lead to more permissive views toward sexuality. In other words, this may in fact be consistent with Reiss. The finding that religiosity is significant in the full model indicates that high levels of religiosity mask the influence of attitudes toward premarital sex on attitudes toward sex education.

The results of our study have several implications for Reiss’s theory of sexuality. First, it appears that religiosity, or at least church attendance, is the overarching theoretical predictor of attitudes toward sexuality (or at least sex education) in the present sample. This is consistent with past research on sex education by Snyder and Spreitzer (1976) and fits with Reiss’s argument that religion shapes attitudes toward gender equality which then predicts attitudes toward sexuality. Views toward the regulation of sexuality (i.e., pornography) are also a consistent predictor of attitudes toward sex education. Those who believe that sexuality should be regulated are consistently less likely to support sex education. On the other hand, militarism does not appear to be as accurate of a predictor of attitudes as it was when Reiss originally formulated his theory. Reiss’s proposition that gender equality is not as likely to advance where militarism is strong may be difficult to measure in American society, where support for the military is overall quite high. It is also possible that militarism is a dated predictor of attitudes toward gender egalitarianism, and that in contemporary American society, religion is a better predictor of such views.

Our measure of labor shortages was significant in model two, but the relationship disappeared when other measures were added into the model. This means that although labor shortages do predict attitudes toward sex education in a manner consistent with Reiss’s
propositions, the explanatory power of regulation of sexuality and religiosity are stronger and mediate the relationship between labor shortages and sex education attitudes. Interestingly, gender equality was not significant in any of the models, which is consistent with Weinberg and colleagues (2000). One would think that gender equality would be closely tied to attitudes toward sex education, but this could be explained by our inability to measure types of sex education programs. Overall, we found limited support for Reiss’s theory, which is likely a result of the fact that our society has moved toward more liberal views toward sexuality generally, and sex education in particular.

As with all studies, there are a number of limitations to consider. The final sample used for analysis consisted of only 300 respondents. Of the 300 respondents, only 28 indicated that they opposed sex education. The low level of variation within the dependent variable limits the generalizations that can be made to the larger population. Additionally, because the data were secondary, the operationalization of theoretical concepts was limited by available questions and data. One specific concern is the theoretical concept of regulation toward sexuality, which was operationalized using a question about the legality of pornography. This may be problematic because pornography raises issues among some groups who believe it should be illegal due to its degrading portrayal of women. Individuals may hold permissive views towards sexuality and sex education but believe pornography should be illegal due to its misogynistic undertones. Further, our measure of labor shortages asked respondents about their perception of ease of finding a replacement job, rather than assessing actual labor shortages or the state of the economy. This could be affected by where one lives, educational attainment, and what type of work they do.

Our study failed to account for differences in types of sex education programs. Surely there are differences between those who support abstinence-only sex education programs and those who prefer comprehensive formats. Future research should take this into account. A final limitation is that Reiss’s theory should ideally be assessed using a more sophisticated statistical model. At its core, Reiss’s theory predicts that structural level variables impact individual level variables which would then predict attitudes toward sexuality. We addressed this limitation by presenting a series of regression models to estimate the independent impact of Reiss’s theoretical “groupings” on attitudes toward sex education, but future research should use a multilevel model in order to conduct a better test of his theory.
Our research was the first to examine predictors of support for sex education among the general population in over 25 years. Further, it was the first study to test Reiss’s theory in its entirety. Our findings provide limited support for Reiss’s theory and suggest that sociocultural factors should be considered, especially as society advances and attitudes toward sexuality evolve. Future researchers can improve upon our study by collecting data specifically to measure Reiss’s theoretical concepts and by using a more sophisticated statistical model that can capture the impact of his theoretical “groupings” on attitudes toward sexuality. Future research should also investigate attitudes toward specific types and formats of sex education programs. The controversies that currently exist around the issue seem to have more to do with content and when the instruction should begin. With research continuing to discern which program types are successful in producing sexually responsible teens, it becomes necessary to determine what distinguishes supporters of different sex education curricula. Public policies, including those that dictate sex education curricula, must gain public support in order to be adopted. By examining the predictors of support by program type, policy makers will be better able to understand the underlying factors contributing to an individual’s attitudes toward sex education.

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