

ABSTRACT

HURST, JEFFREY LEON. Parents' Attitudes Towards the Content of Sex Education in the USA: Associations with Religiosity and Political Orientation. (Under the direction of Dr. Laura Widman).

While most parents support their adolescents receiving school-based sex education, there is variability in which sex education topics receive the most support from parents. Conservative political orientation and greater religiosity have been independently associated with parents' lack of support for school-based sex education; however, no studies have examined the intersection of these two factors. The three goals of this study were to: 1) identify how specific sexual education topics cluster together to form content areas; 2) examine if religiosity and political orientation are uniquely associated with these content areas; and 3) examine if political orientation moderates the relationship between parents' religiosity and their perceived importance for the specific sex education content areas. Participants were a national sample of 881 US parents. The sex education topics clustered into three content areas: Factual Knowledge (e.g., STI transmission), Practical Skills (e.g., how to access condoms), and Pleasure and Identity (e.g., pleasurable aspects of sex). Politically conservative and more religious parents reported the lowest perceived importance for each content area. Importantly, these main effects were qualified by a significant interaction: parents who reported both political conservatism and high levels of religiosity reported the lowest perceived importance for these three content areas being taught.

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Parents' Attitudes Towards the Content of Sex Education in the USA: Associations with
Religiosity and Political Orientation

by
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INTRODUCTION

School-based sex education is important for healthy sexuality development among young people. There are currently two primary forms of sex education offered in schools in the USA: 1) abstinence-only sex education and 2) comprehensive sex education (Hall et al. 2016).

Abstinence-only sex education teaches that the best way to avoid negative sexual health outcomes is to abstain from sex (Trenholm et al. 2008). Comprehensive sex education teaches that beyond abstinence, people can avoid STIs and unplanned pregnancy in other ways (e.g., condom use, STI testing, and contraception; Trenholm et al. 2008). Additionally, comprehensive sex education may address several other topics, including consent, sexual orientation, gender identity, healthy relationships, and different types of sexual behaviors. Research has consistently shown that comprehensive sex education is associated with better sexual health outcomes for adolescents (Denford et al. 2017). For example, comprehensive sex education is associated with lower rates of unplanned pregnancy and STIs (Chin et al. 2012). In addition, adolescents who receive comprehensive sex education have lower levels of homophobia, a better understanding of gender, healthier romantic relationships, and decreased intimate partner violence perpetration and victimization compared to adolescents who receive abstinence-only education or no education about sex (Goldfarb and Lieberman 2021). Despite the positive health outcomes associated with school-based sex education, only around half of adolescents currently receive sex education that meets US national standards for how and when topics such as healthy relationships, anatomy and physiology, and pregnancy and STI reduction strategies should be taught (Future of Sex Education Initiative; Lindberg and Kantor 2022).

In some schools, sex education content can be influenced by parents' attitudes about the type of sex education that should be taught (Eisenberg et al. 2012). While the vast majority of

parents support comprehensive sex education being taught in schools (Kantor and Levitz 2017), parents vary greatly in their support of which topics should be taught (Peter et al. 2015). For example, parents are generally more supportive of instruction about topics such as physical health and relationships, as compared to topics such as sexual or gender identity and pleasure (Peter et al. 2015). Parents' attitudes towards specific topics being taught in sex education can influence the specific sex education content their kids receive.

At a policy level, grassroots coalitions led by parents can influence the type of sex education that specific states require. For example, there are conservative Christian organizations, such as Abstinence Clearinghouse and the National Abstinence Education Association, which push for policies to only allow abstinence-only sex education to be taught in schools (Williams 2011). In contrast, there are other more progressive organizations, such as Metro TeenAIDS, that have formed a coalition of parents who have successfully advocated for HIV prevention to be taught in school-based sex education (Ogusky and Tenner 2010). At the school district level, decisions on whether districts or teachers teach specific topics in sex education can vary in part due to fear of backlash from parents (Eisenberg et al. 2012). For example, one study found that as many as 37% of sex education teachers felt they could not teach what they truly wanted, due to fear of backlash from parents (Eisenberg et al. 2013). Given parents' potential influence on sex education, it is important to identify factors associated with the specific topics that parents believe are important to include in sex education.

Religiosity and Parental Attitudes About Sex Education

Parents' level of religiosity is one factor that can influence the topics that parents approve of being taught in school-based sex education. On average, parents in the USA who are more religious tend to be less supportive of comprehensive sex education being taught in schools (Ito

et al. 2006; Bleakley, Hennessy, and Fishbein 2010; Eisenberg et al. 2022). Many of the most practiced religious affiliations in the USA (e.g., Catholicism and many Protestant Christian denominations) teach that sexual relations should only occur after marriage, between a husband and wife (Regnerus 2007) – which may help explain why religiosity is associated with support for abstinence-only sex education. Indeed, findings from one review indicated that more religious parents were more likely to convey to their children that sexual intercourse should only happen in the context of marriage compared to parents who were less religious (Flores and Barroso 2017). Despite some evidence for the link between religiosity and lower parental support for comprehensive sex education, not all religious parents are opposed to comprehensive sex education. For example, studies have found that some highly religious parents were in support of comprehensive sex education being taught in schools and were even opposed to abstinence-only sex education being taught (Dent and Maloney 2017; Cameron et al. 2020; Constantine, Jerman, and Huang 2007). It is possible that the inconsistent relationship between religiosity and beliefs about comprehensive sex education could be explained by parents' political orientation.

Moderating Effect of Political Orientation

Although religiosity is often associated with political conservatism (Malka et al. 2012), religious people are a heterogeneous group. For example, recent evidence suggests that attitudes towards social justice movements are quite different when comparing religious people who are liberal to religious people who are conservative (Krull 2020). Specifically, liberal Protestant Christians are more likely than conservative Protestant Christians to focus on social justice issues, such as inclusivity (Krull 2020). In addition, one study examined the interaction between religiosity and political orientation concerning attitudes towards gay marriage, finding that religious conservative Christians were the least supportive of gay marriage compared to

Christians who were liberal or moderate (Todd and Ong 2012). This indicates that a liberal political ideology may be associated with more tolerant views surrounding sexuality, even among people who identify as religious. Thus, understanding whether political ideology is also influential when it comes to parents' beliefs about sex education is warranted. However, no studies to our knowledge have examined the moderating effect that political orientation has on the relationship between parents' religiosity and how important they believe it is for comprehensive sex education topics to be taught in schools.

Purpose of this Study

The purpose of the current study was threefold. First, we aimed to identify what sex education topics parents believe are important to be taught in schools and to what extent these topics represent overarching content areas. As this was an exploratory analysis, we did not have a specific hypothesis. Second, we examined whether religiosity and political orientation were associated with specific topics taught in sex education. Based on prior work showing that conservative and religious parents are generally less supportive of comprehensive sex education, we hypothesized that being more religious and more conservative would each be uniquely associated with lower perceived importance for comprehensive topics being taught in sex education. Third, we sought to examine the moderating effect that political orientation has on the association between religiosity and parents' support for comprehensive sex education topics being taught in schools. We hypothesized that parents who were both conservative and highly religious would have the lowest perceived importance for teaching topics in sex education that were comprehensive, such as how to use condoms and the pleasurable aspects of sex.

METHODS

Participants and Procedures

Data for this study came from a larger study on parents' attitudes about adolescent sexual health (Evans et al. 2020). Survey data were collected from a national USA sample of 903 parents recruited from MTurk, who had a child between the ages of 13–17. Parents were asked how many children they had that were between the ages of 13–17; if more than one, parents were randomly assigned to report on either the oldest or youngest child for the purposes of this study. One participant's data was removed for not providing a valid response to the age variable. In an attempt to use the best data possible, we also removed 21 participants who reported their age was 26 or younger and that they had a biological child between the age of 13–17 years old, as it was highly likely this was a reporting error or careless responding. This left us with a final analytic sample of 881 parents. Regarding parent gender, 28.1% of the sample were men ($n = 248$) and 71.9% were women ($n = 633$). The average age of the participants was 41.0 years ($SD = 7.1$). Regarding race/ethnicity, 80.5% of participants identified as White, 7.2% Black, 3.2% Hispanic, 4.9% multiracial, 3.6% other races/ethnicities, and 0.7% of participants did not report their race/ethnicity. Regarding religious affiliation, 63.2% of the sample identified as Christian (29.2% Protestant, 23.2% Catholic, 10.8% another Christian religious denomination), 16.2% were Atheist/Agnostic, 15.8% were 'none/not religious', 1.5% were Jewish, 0.3% were Muslim, and 3.1% were another religion. The mean age of the parents' child was 14.7 ($SD = 1.4$). Regarding the gender of the child, 49.8% were boys ($n = 439$ cisgender boys; $n = 0$ transgender boys), 50.0% girls ($n = 439$ cisgender girls; $n = 1$ transgender girl), and 0.2% identified as non-binary ($n = 2$).

Measures

Parents' Perceived Importance of Topics Being Taught in Sex Education

We included 20 items to assess the perceived importance that parents placed on 20 separate topics being taught in school-based sex education. These items were adapted from the North Carolina Parent Opinion Survey of Public School Sexuality Education (Kalsbeck et al. 2009). Specifically, parents identified how important it was to them that 20 different topics were included in school-based sex education for their children (e.g., abstinence; the basics of reproduction; how to use condoms; see Table 1 for a complete list of topics). Responses were reported on a scale of 1 = I am opposed to it being taught at any point, 2 = Not at all important, 3 = Not too important, 4 = Somewhat important, or 5 = Very important.

Religiosity

A proxy measure of religiosity was used by assessing a single item about religious attendance. Specifically, parents reported how often they attended religious services: 1 = Less than once a year or not at all, 2 = Yearly, 3 = Monthly, 4 = Weekly, 5 = More than once a week. This item was selected as it is a common way to assess religiosity in the literature (Koenig and Büssing 2010; Bleakley, Hennessy, and Fishbein 2010; Heller and Johnson 2013), and it is highly correlated with other measures of religiosity (Dunbar 2020).

Political Orientation

In line with the definition offered by Garneau and Schwadel (2022), we defined political orientation as ‘the positioning of oneself along an ideological continuum (e.g., liberal, moderate, conservative).’ Parents reported their political orientation as 1 = Very liberal, 2 = Somewhat liberal, 3 = Moderate, 4 = Somewhat conservative, 5 = Very conservative. This is a frequently used continuous measure of political orientation (Carney et al. 2008; Bixter 2015; Gries and

Crowson 2010; Hatemi, Crabtree, and McDermott 2017), which has also been included in studies examining parents' attitudes towards sex education (Eisenberg et al. 2008).

Demographics

Participants could report their gender as man, woman or another gender identity with an option to write-in a response (no participants selected this option). They reported their child's gender as a boy, girl, or another gender identity with an option to write in a response. Parents' sexual orientation was reported as 1 = Straight/Heterosexual, 2 = Gay/Lesbian, 3 = Bisexual, 4 = Another sexual identity (with an option to write-in a response). For analyses, we included sexual identity as a control variable and it was collapsed into 1 = Heterosexual, 2 = Sexual Minority (i.e., anyone who indicated gay/ lesbian, bisexual, or another sexual identity).

Analysis Plan

All analyses for this study were conducted in STATA v. 15.1. First, we calculated descriptive statistics including means, standard deviations, and correlations of the study variables. Then, to address our first aim, an exploratory factor analysis was conducted to determine common categories for the importance parents placed on specific topics being included in sex education. Multiple criteria for how many factors to retain were used such as eigenvalues, visual scree plot analysis, primary loadings being greater than .4, and no cross-loadings greater than .2 (Howard 2015). An oblique rotation was applied due to the likelihood that the factors would be correlated (Howard 2015). Then we addressed the second and third aims of our study by running 3-step hierarchical regressions for each of the factors that emerged from Aim 1. In the first step of each model, given the known associations between these variables and preferences for sex education type, we entered the following as control variables:

parent age, parent gender, and parent sexual orientation¹ (Bleakley, Hennessy, and Fishbein 2010). In the second step, which tested our main effect hypothesis (Aim 2), we entered the control variables as well as the main effects of political orientation and religiosity. In the third step, which tested our moderation hypothesis (Aim 3), we entered the control variables, the main effects of political orientation and religiosity, and the interaction between political orientation and religiosity. The continuous² predictors were mean-centered. For each statistically significant interaction, we conducted simple slopes analyses (Liu et al. 2017). The slopes showing the relationship between religiosity and the sex education content area were computed at two levels (1 SD below the mean and 1 SD above the mean) of political orientation to identify the moderating effect that political orientation had on the relationship between religiosity and the perceived importance of the sex education content area. In addition, margins commands in STATA were used to graphically view the interaction.

Post Hoc Analyses

Squared semi-partial correlations were conducted to explain the unique variance that religiosity, political orientation, and the interaction explained in the model while controlling for parent's age, sexual orientation, and gender.

¹ We also ran all models with child gender as a control variable. Since there were only two participants with non-binary children, they were excluded from this analysis. The same pattern of findings emerged when child gender was included in the model as when it was not included. Thus, to include participants who had non-binary children, we retained the model without child gender as the final model.

² As a sensitivity analysis, we also ran our models with both political orientation and religiosity recoded as categorical variables. For religiosity, we created a group for less religious (participating in religious services yearly or less) and a group for more religious (participated in religious services monthly or more). For political orientation, we created three categories: conservative (very conservative and somewhat conservative), moderate, and liberal (somewhat liberal and very liberal). We then ran a 2×3 ANOVA with an interaction term between religiosity and political orientation. The direction and significance of the results did not differ from when the variables were treated as continuous.

RESULTS

Preliminary Analyses

First, descriptive statistics of all the main variables of the study were derived. The mean of religiosity was 2.18 (range = 1–5; SD = 1.35) indicating that, on average, the participants went to a religious service about once a year, but notable variability was observed. Specifically, 49.3% attended religious services less than once a year or not at all, 13.2% attended yearly, 12.9% attended monthly, 20.0% attended weekly, and 4.7% attended more than once a week. The mean of political orientation was 2.95 (range = 1–5; SD = 1.16) indicating that, on average, the participants were moderate in their political orientation. Specifically, 12.3% were very liberal, 23.0% were somewhat liberal, 32.2% were moderate, 22.7% were somewhat conservative, and 9.8% were very conservative. There were small-to-medium statistically significant correlations between variables of the study (r s between $-.39$ to $.33$). Higher levels of religiosity were associated with being conservative (see Table 2).

Exploratory Factor Analysis

Based on the criteria outlined in the analysis plan above, a three-factor structure emerged as the best fitting model. The first three eigenvalues were large (see Table 1) and collectively explained 98% of the variance in the latent factor. All factor loadings were large (ranging from $.45$ to $.91$). There was one item that loaded onto two factors (effectiveness and rates of birth control). We ran all analyses with and without this item included in the composite of the scale it loaded onto the highest, and there were no changes in the direction or significance of the tests. As such, we opted to keep this item in and not drop it. The factors that emerged were labeled: ‘Factual Knowledge’ (e.g., the basics of reproduction, STI transmission; $n = 11$ topics; $\alpha = .88$), ‘Practical Skills’ (e.g., how to get condoms or birth control; $n = 5$ topics; $\alpha = .93$), and ‘Pleasure

and Identity' (e.g., what gender or sexual orientation means, $n = 4$ topics; $\alpha = .85$; see Table 1). Thus, the final three sex education content areas that make up the focus of this paper are Factual Knowledge, Practical Skills, and Pleasure and Identity. On average parents showed high perceived importance for all three content areas, with significant variability noted between people. Specifically, parents supported Factual Knowledge the most, with a mean of 4.52 (range = 1–5; $SD = 0.57$), followed by Practical Skills, with a mean of 4.34 (range = 1–5; $SD = 0.99$). Parents had the lowest average level of support for Pleasure and Identity, with a mean of 3.89 (range = 1–5; $SD = 1.08$). Bivariate correlations showed that higher levels of religiosity and being more conservative were each associated with lower levels of perceived importance for all three of the sex education content areas (r_s $-.39$ to $-.13$; see Table 2).

Main Effects

For the first model with Factual Knowledge as the outcome variable, we controlled for parent age, parent gender, and parent sexual orientation in the first step (Table 3). In the second step, we added the main effects of religiosity and political orientation and found both main effects were significant. Specifically, being more conservative ($\beta = -.11$, $p = .002$) and having higher levels of religiosity ($\beta = -.10$, $p = .006$) were both associated with less perceived importance of Factual Knowledge being taught in sex education. For the second model with Practical Skills as the outcome variable, we included control variables in the first step (Table 3) and the main effects of religiosity and political orientation in the second step. Both main effects were significant. Specifically, being more conservative ($\beta = -.24$, $p < .001$) and having higher levels of religiosity ($\beta = -.30$, $p < .001$) were both associated with less perceived importance for Practical Skills being taught in sex education. For the third model with Pleasure and Identity as the outcome variable, we included control variables in the first step (Table 3). In the second step,

we added the main effects of religiosity and political orientation. Both main effects were significant. Specifically, being more conservative ($\beta = -.33, p < .001$) and having higher levels of religiosity ($\beta = -.14, p < .001$) were both associated with less perceived importance for Pleasure and Identity being taught in sex education.

Interaction Effects

We addressed Aim 3 in the third step of the hierarchical regression by adding the interaction between religiosity and political orientation. For support of Factual Knowledge being taught in school, there was a significant interaction between political orientation and religiosity ($\beta = -.08, p = .014$). Simple slopes analyses revealed that the relationship between religiosity and support for Factual Knowledge was statistically significant when participants' political orientation was more conservative. Consistent with hypotheses, this indicated that participants who were more politically conservative and high on religiosity showed the lowest perceived importance for Factual Knowledge being taught in sex education (see Figure 1a). Overall, our model accounted for 5% of the variance in Factual Knowledge, $R^2 = .05, F(6, 874) = 7.90, p < .001$. For support for Practical Skills being taught in school, there was also a significant interaction between political orientation and religiosity ($\beta = -.18, p < .001$). Simple slopes analyses revealed that the relationship between religiosity and Practical Skills was statistically significant when political orientation was more conservative. Participants who were more politically conservative and high on religiosity showed the lowest perceived importance for Practical Skills being taught in sex education (see Figure 1b). Overall, our model accounted for 24% of the variance in Practical Skills, $R^2 = .24, F(6, 874) = 46.21, p < .001$. Finally, for support for Pleasure and Identity being taught in school, there was a significant interaction between political orientation and religiosity ($\beta = -.15, p < .001$). Simple slopes analyses revealed that the relationship between religiosity and

Pleasure and Identity was statistically significant when participants' political orientation was more conservative. Participants who were more politically conservative and high on religiosity showed the lowest perceived importance for Pleasure and Identity being taught in sex education (see Figure 1c). Overall, our model accounted for 19% of the variance in Pleasure and Identity, $R^2 = .19$, $F(6, 874) = 33.61$, $p < .001$.

Post Hoc Analyses

For Factual Knowledge, religiosity (*Squared Semi-partial Correlation* = .01), political orientation (*Squared Semi-partial Correlation* = .01), and the interaction (*Squared Semi-partial Correlation* = .01) all uniquely explained about 1 percent of the variance in Factual Knowledge. For Practical Skills, religiosity (*Squared Semi-partial Correlation* = .06), explained about 6 percent of the variance, political orientation (*Squared Semi-partial Correlation* = .05) explained about 5 percent, and the interaction (*Squared Semi-partial Correlation* = .03) explained about 3 percent. For Pleasure and Identity, religiosity (*Squared Semi-partial Correlation* = .01), explained about 1 percent of the variance, political orientation (*Squared Semi-partial Correlation* = .09) explained about 9 percent, and the interaction (*Squared Semi-partial Correlation* = .02) explained about 2 percent.

DISCUSSION

Comprehensive school-based sex education is important for adolescent sexual and relationship health (Denford et al. 2017), yet attitudes about sex education vary considerably among parents. The purpose of this study was to identify the importance that parents place on a variety of topics in adolescent school-based sex education and to identify how these topics cluster together to form content areas. Next, we examined the associations between religiosity and political orientation on these content areas and the moderating influence of political

orientation on the association between parents' religiosity and their perceived importance towards specific topics being taught in sex education. Like past research which has examined parents' attitudes towards what is taught in sex education (Kantor and Levitz 2017), parents thought it was important that their adolescents received education on many sexuality topics. Three content areas of sex education were identified: Factual Knowledge, Practical Skills and Pleasure and Identity. Parents who were conservative and had high levels of religiosity showed the lowest perceived importance for these content areas being taught in sex education.

When we examined parents' perceived importance of individual topics being taught in school-based sex education, we found high perceived importance for most topics. The highest perceived importance was for topics related to the transmission of STIs and HIV as well as relational topics such as how to deal with the pressures to have sex and what to do if sexually assaulted. Specifically, at least 95% of parents indicated that these topics were somewhat important or very important to be taught in school-based sex education classes. Prior research has also found that most parents think these topics were somewhat or very important to include in sex education (Kalsbeck et al. 2009; Kantor and Levitz 2017; Peter et al. 2015). The two topics that parents believed were the least important to be taught in schools were abstinence until marriage and the pleasurable aspects of sex. Specifically, only 56% of parents thought that abstinence until marriage was somewhat important or very important for their adolescents to learn about in sex education. This differed drastically from a prior study which showed that 94% of parents supported abstinence being taught (Kantor and Levitz 2017). These differences could show how parents' attitudes have shifted over time. Additionally, only 57% of parents thought it was somewhat or very important for pleasure to be taught in sex education. This is consistent with previous studies which have found that parents are hesitant to talk about the pleasurable

aspects of sex with their adolescents as they fear it could lead to their adolescents engaging in sexual activity (Pariera 2016), and that 55% of parents want pleasure to be taught in sex education (Peter et al. 2015).

We also found that the topics parents thought were important clustered into three content areas. The findings from this factor analysis emphasized past research which has found that even within support for comprehensive sex education there can be variability in what specific topics parents want to be taught (Peter et al. 2015). For example, parents thought it was very important for the content areas Factual Knowledge (e.g., how to deal with pressure to have sex and the basics of reproduction) and Practical Skills (e.g., how to use a condom and how to get tested for an STI) to be taught in sex education. Parents thought it was less important for Pleasure and Identity (e.g., sexual pleasure and the meaning of gender) to be taught in school. This suggests that, even among parents who feel comprehensive sex education is important, there is hesitation when it comes to certain contemporary or relatively controversial topics. Importantly though, parents were still, on average, in support of Pleasure and Identity being taught in school. These findings highlight the importance of taking a topic-based approach in understanding attitudes towards sex education rather than focusing on just the overarching type of sex education (i.e., abstinence-only vs. comprehensive) parents prefer.

As predicted, we found unique associations between parents' perceived importance for school-based sex education and both religiosity and political orientation, individually. Consistent with past research (Bleakley, Hennessy, and Fishbein 2010), we found that more religious parents had lower levels of perceived importance for all three content areas being taught in sex education compared to less religious parents. Also consistent with past research (Kantor and Levitz 2017), we found that more conservative parents had lower perceived importance for all

three content areas being taught compared to more liberal parents. However, a key contribution of our study, which extends limitations in prior research, is the consideration of the interaction between religiosity and political orientation.

Critically, the current study found that political orientation moderated the relationship between religiosity and parents' perceived importance for all three content areas being taught in sex education. Specifically, we found that parents who had high levels of religiosity and who were more conservative reported the lowest perceived importance for Factual Knowledge, Practical Skills, and Pleasure and Identity. However, when parents were religious and liberal, they had high perceived importance for all three content areas being taught. Similarly, when parents were conservative but not religious, they also had high perceived importance for all content areas being taught. Although not about sex education attitudes, these findings are similar to a past study that found the relationship between religiosity and attitudes towards gay marriage was moderated by political orientation, such that when participants were more religious, they were the least supportive of gay marriage, with this relationship being the strongest when participants were conservative (Todd and Ong 2012). Our results highlight the need to examine both religiosity and political orientation together in future studies as these factors clearly work in tandem to influence parents' attitudes.

One phenomenon that could potentially explain the moderating influence of political affiliation on the relationship between religiosity and parents' attitudes towards what is taught in sex education is Christian Nationalism. People with higher levels of Christian Nationalist attitudes believe that the country should remain Christian and promote Christian values (Perry and Whitehead 2015). Christian Nationalists tend to be both highly religious and highly conservative (Whitehead, Perry et al. 2018). Higher levels of Christian Nationalist beliefs have

been associated with less support for gay marriage (Whitehead and Perry 2015, Bjork-James 2019), and a stronger desire to outlaw pornography, restrict abortion, and restrict transgender rights (Whitehead and Perry 2020). While we did not directly measure attitudes toward Christian Nationalism, it is a phenomenon that could explain our findings, particularly given the high proportion of Christian participants in the current study. Future studies could examine if individuals who have higher levels of Christian Nationalism have lower levels of support for comprehensive topics being taught in sex education.

In addition to Christian Nationalism, research on moral foundations theory (Haidt and Joseph 2004) could help explain why parents who are religious and conservative were lower on perceived importance of comprehensive sex education than parents who are only high on one of these characteristics (but not the other). According to moral foundations theory, there are five foundational general moral domains in which individuals develop virtues and moral practices: harm/care, fairness/reciprocity, ingroup/loyalty, authority/respect, and purity/sanctity (Haidt and Graham 2007). People who are politically conservative value all five of the foundational domains, whereas people who are politically liberal tend to place the most importance on harm/care and fairness/reciprocity, with less emphasis on ingroup/loyalty, authority/respect, and purity/sanctity (Graham, Haidt, and Nosek 2009). Reliance on these moral foundations and the intersection of religiosity can explain why political orientation moderates the relationship between religiosity and parents' attitudes towards which topics to include in sex education. With the reliance on ingroup/loyalty and authority/ respect, individuals who are conservative tend to put trust in an organization that they are a part of and do not question (Haidt and Graham 2007). Thus, when people are religious and conservative, they may adhere more strictly to the teachings of their religious organization (which may assert that it is important to be abstinent until

marriage). On the other hand, if an individual is religious but not conservative, they could have a more open mind about what is taught in sex education because they are not as motivated to strictly abide by their religious organization's teachings. Future research could examine the influence that these five moral foundations have on parents' attitudes towards what is taught in sex education.

Limitations and Future Directions

While this study has strong findings that add to the literature on parents' preferences towards what should be taught in school-based sex education, it also has some limitations. The first limitation lies in the use of an MTurk sample, which may not be representative of the general population. MTurk samples tend to be younger, more educated, more liberal, less religious, and of lower socioeconomic status than the average US resident (for reviews, see: Levay, Freese, and Druckman 2016; Sheehan 2018; Walters, Christakis, and Wright 2018). Additionally, our sample did not reflect the racial/ethnic diversity of the USA, with over 80% of our participants identifying as White. However, using MTurk, we were able to recruit a large sample of parents who were diverse in political orientation and religiosity. Another limitation of our study was the one-item measure of religiosity. Some scholars have recommended using more comprehensive measures of religiosity that capture other domains such as religious salience or religious identity (Hardy et al. 2019), rather than just a behavioral measure of religiosity such as religious service attendance. Future studies should seek to replicate these findings with more comprehensive measures of religiosity. An additional limitation of this study was the lack of racial diversity and inability to examine between-group differences by race and ethnicity. Past research has produced mixed findings regarding preferences for type of sex education between racial/ethnic groups. For example, some studies find no differences in support for sex education

based on race/ethnicity (Eisenberg et al. 2008; Heller and Johnson 2013; Kristin et al. 2006), and others find that parents of color have higher levels of support for school-based sex education than White parents (Millner, Mulekar, and Turrens 2015). Additionally, research examining parental support for specific sex education topics has found that parents of color are more supportive of topics such as sexual orientation and gender identity being taught in sex education (Barr et al. 2014). Future research would benefit from further investigating attitudes towards sex education among parents of color and whether religiosity and political orientation are influencing these views.

Future research could also examine how religiosity and political orientation influence sex education policy. Decades of research point towards the criticality of comprehensive sex education to adolescent development and lifelong wellbeing. Therefore, in addition to better understanding how religiosity and political orientation influence parents' support of what is taught in sex education, research and interventions could consider how to promote positive attitudes towards comprehensive sex education among all parents. For religious and conservative parents, what is taught in sex education may be a matter of morality (Haidt and Graham 2007), and researchers who do not see this as a moral issue should consider and strategize ways to promote comprehensive sex education that still align with the moral feelings that these parents have.

Constraints on Generalizability

Results from this study were the first to find that political orientation moderates the associations between religiosity and parents' support for specific topics being taught in sex education. However, the effects on parents support were small and future research is needed to replicate these findings. Given the unique political and religious landscape of the United States

we would not expect these findings to replicate in other countries. Additionally, this study came before covid-19 and the supreme court's decision to overturn Roe V Wade. Both contextual factors could change the strength of these findings. As mentioned, the measure of religiosity is a poor conceptualization of religiosity, and future research is needed to identify if the findings of this study replicate using a more precise measure of religiosity.

Conclusion

To our knowledge, this is the first study to examine the moderating influence of political orientation on religiosity and parental support for topics being taught in school-based sex education. While we found that most parents are supportive of the three content areas being taught in sex education, parents who are politically conservative and highly religious showed the least support. Findings from this study can help inform future research, programs and interventions to better understand the reasons why some parents do not want their adolescents to receive comprehensive sex education. Future interventions can leverage parents' existing values and concern for their children's wellbeing and help them understand how comprehensive sex education can be beneficial for adolescents and still align with their political and religious beliefs.

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Table 1

Factor Analysis of the Items Measuring Parent's Attitudes Towards Including Specific Topics in Sex Education

Individual Scale Items	Factor Loadings			Eigenvalue	Factor Alpha	% Support
	Factual Knowledge	Practical Skills	Pleasure and Identity			
Factual Knowledge				9.65	.88	
How to deal with pressure to have sex	0.80	0.00	-0.01	-	-	95.2
Transmission and prevention of HIV, AIDS, or other sexually transmitted diseases	0.77	0.15	-0.12	-	-	96.9
The basics of reproduction or how babies are made, pregnancy, and birth	0.75	0.07	-0.08	-	-	96.3
What to do if one has been raped or sexually assaulted	0.72	0.04	-0.02	-	-	95.0
The risks of sexting	0.70	-0.13	0.19	-	-	91.8
Talking about what sexual consent means	0.66	0.01	0.16	-	-	94.0
How to deal with the emotional issues and consequences of being sexually active	0.66	0.13	0.11	-	-	91.5
How to talk with parents about sex and relationship issues	0.64	0.06	0.08	-	-	88.9
How to talk with a dating partner about sex and relationships	0.49	0.21	0.17	-	-	89.3
Effectiveness and failure rates of birth control methods, including condoms	0.47	0.43	-0.02	-	-	92.7
Abstinence until marriage	0.45	-0.35	-0.07	-	-	56.0
Practical Skills	-	-	-	1.70	.93	
How to use condoms	0.02	0.91	-0.01	-	-	87.3
Where to get birth control, including condoms	0.02	0.83	0.07	-	-	84.9
How to use other birth control methods, such as birth control pills, or Depo-Provera	0.09	0.80	0.01	-	-	86.8
Classroom demonstrations of how to use a condom correctly	-0.12	0.74	0.20	-	-	74.4
How to get tested for HIV/AIDS and sexually transmitted diseases	0.23	0.62	0.09	-	-	87.2
Pleasure and Identity	-	-	-	0.88	.85	
Talking about what gender means	-0.01	-0.01	0.86	-	-	69.9
Talking about what sexual orientation means	-0.05	0.12	0.84	-	-	72.9
The pleasurable aspects of sex	0.01	0.16	0.59	-	-	57.6
The differences between pornography and sex in real life	0.28	0.00	0.51	-	-	80.1

Note. % Support = the percentage of parents who indicated that these topics were either somewhat important or very important to include in school-based sex education.

Table 2

Means, Standard Deviations, and Correlations of Study Variables

Variable	<i>M</i> (<i>SD</i>)	Range	1	2	3	4	5	6	7	8
1. Religiosity	2.18 (1.35)	1-5	--							
2. Political Orientation	2.95 (1.16)	1-5	0.34***	--						
3. Factual Knowledge	4.52 (0.57)	1-5	-0.13***	-0.14***	--					
4. Practical Skills	4.34 (0.99)	1-5	-0.39***	-0.35***	0.60***	--				
5. Pleasure and Identity	3.89 (1.08)	1-5	-0.25***	-0.38***	0.51***	0.65***	--			
6. Parent Age	40.99 (7.09)	24-84	0.13***	0.07*	0.00	-0.11**	-0.03	--		
7. Sexual Orientation (heterosexual) – <i>n</i> (%)	811 (92.05)	0-1	0.07	0.19***	0.03	-0.08*	-0.10*	0.12***	--	
8. Parent Gender (man) – <i>n</i> (%)	248 (28.15)	0-1	0.01	0.11**	-0.13***	-0.08*	-0.05	0.07*	0.08*	--

Note. For parent gender, 0 = woman, 1 = man; for sexual orientation, 0 = sexual minority, 1 = heterosexual. * $p < .05$. ** $p < .01$.

*** $p < .001$.

Table 3

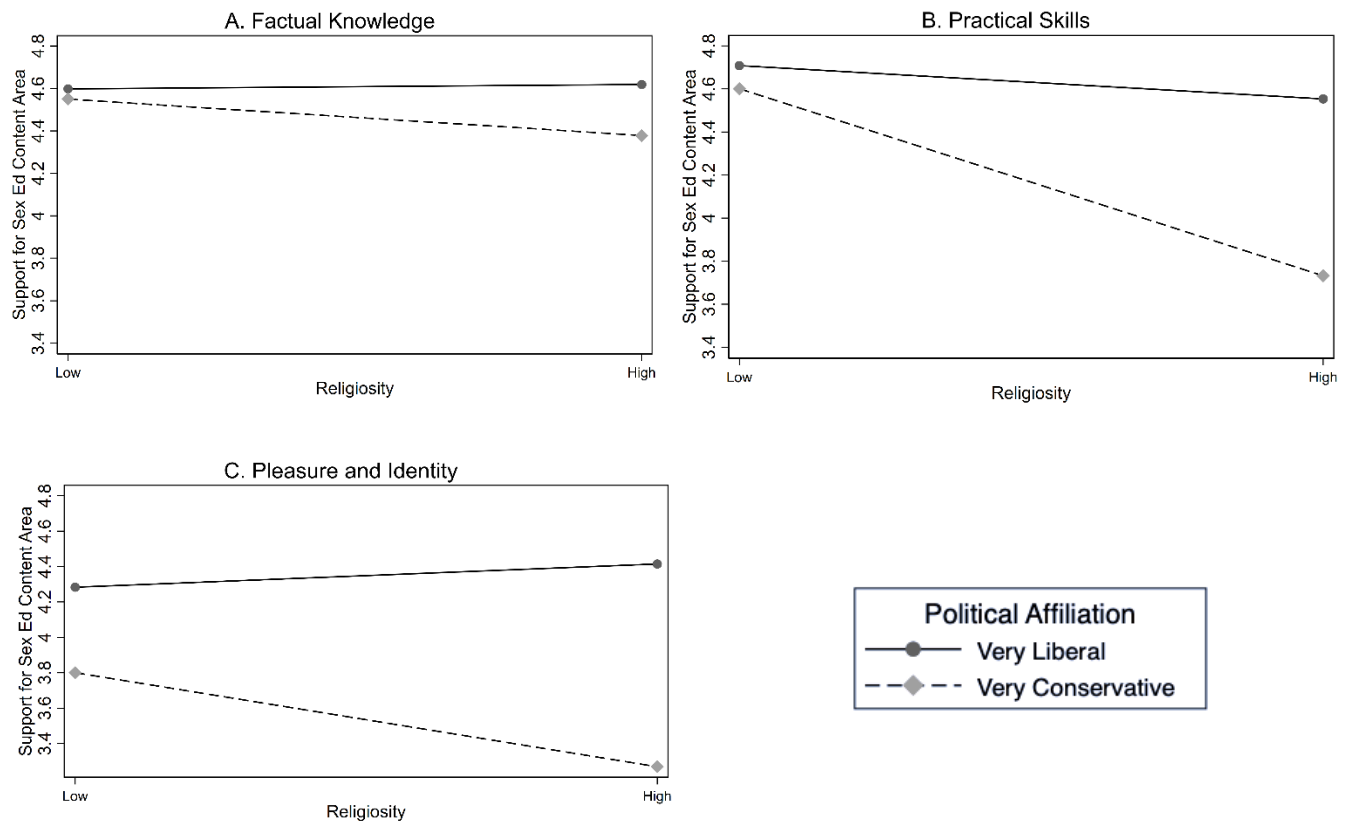
Three-step Hierarchical Regression Table for the Three Content Areas of Sex Education

	Factual Knowledge			Practical Skills			Pleasure and Identity		
	β	R^2	ΔR^2	β	R^2	ΔR^2	β	R^2	ΔR^2
Step 1		.018			.021			.012	
Parent Age	0.01			-0.09**			-0.01		
Sexual Orientation	0.04			-0.07*			-0.09**		
Parent Gender	-0.13***			-0.07*			-0.05		
Step 2		.045	.027***		.210	.188***		.165	.153***
Parent Age	0.03			-0.05			0.02		
Sexual Orientation	0.06			-0.01			-0.03		
Parent Gender	-0.12**			-0.05			-0.02		
Political Orientation	-0.11**			-0.24***			-0.33***		
Religiosity	-0.10**			-0.30***			-0.14***		
Step 3		.051	.007*		.241	.030***		.187	.022***
Parent Age	0.03			-0.05			0.02		
Sexual Orientation	0.06			-0.01			-0.04		
Parent Gender	-0.12***			-0.04			-0.01		
Political Orientation	-0.11**			-0.23***			-0.32***		
Religiosity	-0.08*			-0.26***			-0.11**		
Interaction	-0.08**			-0.18***			-0.15***		

Note. For parent gender, higher levels were indicative of being a man. For sexual orientation higher levels were indicative of being heterosexual. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 1

Interaction Plots of Margins Estimations



Note. Interaction plots showing the slopes between religiosity and the content areas at high (1 *SD* above the mean) and low (1 *SD* below the mean) levels of political orientation.