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Teachers' attitudes toward homosexuality and the lesbian, gay, bisexual, and queer community in the United States

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Abstract

Lesbian, gay, bisexual, and queer (LGBQ) students are a substantial minority group within U.S. elementary, middle, and high schools. Many LGBQ students face harassment and discrimination, which can contribute to educational and psychological problems. Teachers play key roles in students' school experiences, and their attitudes about homosexuality can influence their behavior toward LGBQ students. The purpose of this study was to examine the prevalence of teachers' positive and negative LGBQ-related attitudes, potential changes in attitudes over time, and demographic and social variables that may be related to teachers' attitudes. This study uses data from 305 pre-kindergarten through 12th grade teachers, collected in waves 2006–2014 of the General Social Survey. Results indicate that teachers' attitudes toward homosexuality have become more favorable over time; however, many teachers still hold negative attitudes. Just under half of teachers exhibited at least one negative LGBQ-related attitude. Age, political conservativeness, religious attendance, and carryover of religious beliefs were significantly associated with negative LGBQ attitudes. Teachers with a fundamentalist religious orientation tended to have more negative attitudes about homosexuality than teachers with more progressive religious orientations. Negative attitudes were more often found among teachers of color, compared to White teachers, and teachers in the South, Midwest, and Mountain regions tended toward more negative attitudes than teachers in the Northeast and Pacific regions. Teachers have an ethical responsibility to see that all students, regardless of sexual orientation, receive a quality education. Education and training are needed to address problematic attitudes that may negatively affect LGBQ students.

Keywords Teacher attitudes · Homosexuality · Sexual orientation · Gay · Lesbian · Bisexual

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1 Introduction

Students who identify as lesbian, gay, bisexual, or queer[1] (LGBQ) are a substantial minority who face unique challenges in the school environment, which can compromise their well-being and educational success. During adolescence, sexuality takes a prominent role in the lives of youth. The average age at which youth become aware of same-sex sexual attractions and identify as LGBQ ranges from 11 to 18 (Hall 2018). Nationally representative U.S. data indicate that 10% of youth are LGBQ (McCabe et al. 2011). Many LGBQ students face hostile school climates during this important time in their physical, cognitive, socio-emotional, and educational development. Teachers play a significant role in the lives of students and shape the school climate. Teachers' LGBQ-related attitudes are important because they influence their behaviors and interactions with LGBQ students, which may contribute to a supportive or hostile school environment. This study examined pre-kindergarten through 12th grade (PK-12) teachers' attitudes about homosexuality.

1.1 Hostile school climate for LGBQ students

In a recent national study of LGBQ students in U.S. middle and high schools, 74% of students reported experiencing verbal harassment at school in the past year and 17% were physically assaulted (e.g., punched, kicked, or injured with a weapon; Kosciw et al. 2014). Heterosexist language appears to be ubiquitous in secondary schools. Findings showed that 98% of LGBQ students heard the word "gay" used in a negative way (e.g., "that's so gay"), and 97% heard sexual orientation slurs (e.g., "faggot").

Unfortunately, teachers may contribute to a hostile school climate for LGBQ students. Among students who were harassed at school, 57% did not report the harassment to school staff (Kosciw et al. 2014). When asked about the reasons students did not report harassment, the most common response was doubt that educators would effectively intervene and address the harassment. Other reasons also related to school personnel, including educators not taking the harassment seriously, educators being homophobic, and fear that educators would judge or treat reporting students differently. Such reasoning seems justified amid other data showing lack of intervention and use of heterosexist language by school personnel. When anti-LGBQ comments were made in the presence of school personnel, 42% of students reported that these personnel did not intervene (Kosciw et al. 2014). In addition, 51% of students heard anti-LGBQ remarks (e.g., "faggot" or "dyke") from teachers and school staff. LGBQ students have reported other instances of discrimination perpetuated by school personnel. For example, 37% of students reported that their

[1] The term "queer" is an umbrella term for people of diverse sexualities who are not heterosexual. It is also an alternative identity to the traditional non-heterosexual identities of gay, lesbian, or bisexual. In this sense, a queer identity entails rejection of heteronormativity (i.e., the belief that heterosexuality is the only normal sexual orientation) and a gender binary (i.e., there are only two distinct genders that have natural roles in life).

schools had disciplined LGBQ students for public displays of affection, and 24% of students were discouraged from discussing or writing about LGBQ topics for class assignments and projects.

Hostile school environments can contribute to educational problems among LGBQ students. More than half (56%) of LGBQ students felt unsafe at school because of their sexual orientation (Kosciw et al. 2014). Other studies demonstrate that compared to their heterosexual peers, sexual minority students are more likely to feel disconnected from school (Poteat et al. 2011; Rostosky et al. 2003; Russell et al. 2001), skip or miss school (Burton et al. 2014; Poteat et al. 2011), and perform poorly (Pearson et al. 2007; Poteat et al. 2011; Rostosky et al. 2003; Russell et al. 2001). When asked about missing school, 30% of LGBQ students reported that they had missed at least 1 day of school in the past month because they felt unsafe or uncomfortable (Kosciw et al. 2014).

1.2 Attitude theory

In the social psychology literature, attitudes play an important role in dynamics of prejudice and discrimination. Attitudes are individual's evaluative judgements of people, places, things, events, and issues (Maio and Haddock 2015). The focus of the evaluative judgement is referred to as the attitude object, and individuals vary in their attitudinal positions toward an object. In addition, attitudes have valence, which varies from positive to negative (e.g., liking vs. disliking or favoring vs. disfavoring). Prejudice is a specific type of negative attitude directed at individuals based on their membership in a particular social group (Plant 2007). Attitudes can also vary in strength (Maio and Haddock 2015). For example, a person may feel strongly negative about an object, or perhaps, mildly negative. Nonetheless, an individual may also feel undecided, neutral, or mixed about an attitude object (Maio and Haddock 2015).

The tripartite or multicomponent model of attitudes posits that attitudes involve cognitive, affective, and behavioral components (Maio and Haddock 2015; McGuire 1985; Rosenberg and Hovland 1960). The cognitive component refers to thoughts and beliefs associated with the attitude object. The affective component refers to feelings and emotions associated with the attitude object. And, the behavioral component refers to past, present, and future behavioral experiences with the attitude object. These three components can inform the development of attitudes because attitudes can be based on cognitive, affective, and behavioral experiences or information (Zanna and Rempel 1988). And, attitudes can generate cognitive, affective, and behavioral responses (Eagly and Chaiken 1993). Therefore, these three components contribute to the manifestation of attitudes and attitudinal responses.

Scholars have also conceptualized attitudes as implicit and explicit (Dovidio et al. 2001; Ranganath and Nosek 2007). Implicit attitudes typically exist outside of conscious awareness and are difficult to monitor and control because they are automatically activated. On the other hand, individuals are consciously aware of explicit attitudes and can easily report about them (e.g., "Homosexuality is immoral." "I'd be uncomfortable having gay students in my class." "I don't like gay people." "Gay

people should keep their sexuality to themselves."). Finally, attitudes are latent constructs because they are not directly observable, and thus, they are often measured using introspective self-report methods where individuals rate their agreement/disagreement, support/opposition, or acceptance/unacceptance with a series of statements related to the attitude object (Maio and Haddock 2015).

1.3 Teacher attitudes and LGBQ students

Few studies have examined LGBQ-related attitudes of PK-12 teachers or those preparing to be teachers. A study of educators in rural New York showed that 6% did not feel comfortable interacting with LGBQ youth, 19% did not want their office or classroom to be a safe space for LGBQ youth, and 20% were unwilling to discuss LGBQ issues with colleagues (O'Connell et al. 2010). A study in Texas showed that 35% of teacher candidates held one or more negative attitudes about homosexuality and gay/lesbian people (Wyatt et al. 2008). These attitudes included considering homosexuality to be sinful, abnormal, unnatural, and pathological (Wyatt et al. 2008). In addition, two large national studies of teachers have also found that negative attitudes about LGBQ youth were prevalent. A national survey of elementary school teachers showed that 51% would not feel comfortable responding to student questions about LGBQ people, and 18% would not be comfortable addressing bullying and harassment of students perceived to be LGBQ (GLSEN and Harris Interactive 2012). In a national survey of secondary school teachers, 24% did not feel that educators have an obligation to ensure a safe and supportive learning environment for LGBQ students (Harris Interactive and GLSEN 2005). Together, these findings suggest that a substantial number of teachers have negative attitudes about homosexuality and supporting LGBQ students.

Researchers have also established a link between attitudes and behavior (i.e., attitude-behavior consistency; Haddock and Maio 2007). Two meta-analyses evidenced significant associations between explicit attitudes and behavior: Kraus (1995) found an overall moderate effect ($r = .24$) for the relationship between prejudice against minority groups and future behavior, and Greenwald and colleagues (2009) found an overall moderate correlation ($r = .22$) between sexual orientation- and gender-related attitudes and social behavior. Connections between explicit attitudes and behavior have also been demonstrated in studies of educators. A study of preservice teachers found a significant relationship between prejudicial attitudes toward gay men and a follow-up measure of social distance of gay men (Herbstrith et al. 2013). In another study of teachers, school psychologists, and school counselors, positive attitudes about advocating for LGBQ students predicted intent to intervene in instances of anti-LGBQ harassment (McCabe et al. 2013). Similarly, another study showed that as attitudes about LGBQ people moved from negative to positive, school counselors reported more engagement in behaviors to make the school climate less heterosexist and more supportive for LGBQ students (Hall et al. 2013). Thus, teachers' attitudes can influence their behavior, which suggests that these attitudes may serve as a foundation for supportive actions regarding LGBQ students, or teachers may contribute to a hostile school climate for these youth.

The National Education Association (NEA), which is the largest professional association of educators in the United States, has explicitly addressed student sexual orientation in its code of ethics for education professionals. According to the code, educators "shall not on the basis of…sexual orientation, unfairly exclude any student from participation in any program, deny benefits to any student, or grant any advantage to any student" (NEA National Education Association 2016, p. 434). Thus, educators have an ethical responsibility to ensure that LGBQ students can access and benefit from a quality education.

1.4 Predictors and correlates of LGBQ-related attitudes

Few studies have examined factors associated with LGBQ attitudes among teachers. Findings are mixed regarding race/ethnicity with one study showing no significant differences between White, Hispanic, African American, and Asian teachers on LGBQ attitudes (Wyatt et al. 2008), whereas another study showed that teachers of color had more negative attitudes than White teachers (Mudrey and Medina-Adams 2006). Findings on gender are also mixed. Two studies found no significant differences in LGBQ attitudes between male and female preservice teachers (Mudrey and Medina-Adams 2006; Wyatt et al. 2008); however, in one study, males had significantly more negative attitudes toward gay men (Wyatt et al. 2008). Differences in the gender of the attitude object (e.g., gay men vs. lesbians), as well as the gender of the educator, seem to influence attitudinal responses. A third study showed that male preservice teachers rated gay men kissing negatively but not lesbians kissing, whereas female preservice teachers rated both gay men and lesbians kissing negatively (Herbstrith et al. 2013). Similarly, male teachers rated gay male-headed families more negatively than lesbian-headed families, whereas female teachers rated lesbian-headed families more negatively than gay male-headed families (Herbstrith et al. 2013). Regarding other factors, research has shown no significant relationships between LGBQ attitudes and teachers' education level (O'Connell et al. 2010) or licensure area (i.e., early childhood, middle, secondary, and special education; Mudrey and Medina-Adams 2006). In another study, political views were related to attitudes: those who identified as liberal had more positive LGBQ attitudes than moderates and conservatives, and moderates had more positive attitudes than conservatives (Wyatt et al. 2008). Thus, the extant literature on race/ethnicity and gender are mixed, and other factors that may indeed be related to teachers' LGBQ attitudes (e.g., education level, teacher grade level, and political orientation) have received limited research attention. Confidence in these findings is questionable because the evidence is based on studies using small to moderate size convenience samples. Studies of educators have also neglected to include other relevant explanatory variables, such as religion, geographic location, and age.

Among the general population, other variables shown to be related to LGBQ attitudes include age, economic class, geographic area, and religiousness. For example, studies have found that older people tend to have more negative LGBQ attitudes than younger people (Andersen and Fetner 2008; Avery et al. 2007). People with higher incomes tend to have more positive attitudes than those with lower incomes

(Andersen and Fetner 2008; Whitehead 2010). Individuals' attitudes also vary by geographic region. People living in the South tend to have more negative LGBQ attitudes than those in the Northeast and Pacific regions (Ohlander et al. 2005; Whitehead 2010). In addition, individuals living in more populated or urban areas tend to have more positive LGBQ attitudes than people living in less populated or rural areas (Andersen and Fetner 2008; Ohlander et al. 2005). And finally, people who are more religious tend to have more negative LGBQ attitudes than people who are less religious (Andersen and Fetner 2008; Olson et al. 2006; Schwartz 2010; Whitehead 2010; Whitley 2009).

1.5 Current study

The body of research on LGBQ issues in education has primarily focused on student perspectives. Less is known about educators and LGBQ issues, including their attitudes toward homosexuality and LGBQ individuals and what factors contribute to these attitudes. And, much of the empirical literature on educators has been conducted with pre-service teachers. Other gaps in the literature relate to the lack of nationally representative studies of teachers and LGBQ attitudes, as well as limited inclusion of explanatory variables. Prior studies also rely on data collected at only one time point.

The current study aimed to fill several gaps in the literature. To the authors' knowledge, this was the first nationally representative U.S. study to examine PK-12 school teachers' attitudes about homosexuality and the LGBQ community. In addition, this study sought to expand the literature by investigating how an array of demographic, geographic, and social variables relate to teachers' LGBQ-related attitudes. And, this study used data from several time points to examine potential shifts in attitudes over time. The research questions for this study included the following: What proportion of teachers have positive, negative, and neutral or uncertain LGBQ-related attitudes? Have teachers' LGBQ attitudes changed in the past decade? Do teachers' LGBQ attitudes vary by age, race/ethnicity, gender, sexual orientation, education level, economic class, school grade level, geographic area, political orientation, and religiosity?

2 Methods

2.1 Sample

This secondary research study used data from the General Social Survey (GSS), which is a repeated cross-sectional survey with nationally representative samples of adults in the United States (National Opinion Research Center 2016). Detailed information about the GSS methods and data is available elsewhere (see National Opinion Research Center 2016). In this study, data from waves 2006, 2008, 2010, 2012, and 2014 were used to ensure a sufficient sample size, to examine potential changes in attitudes over time, and to have contemporary data so that findings would

be relevant and generalizable. Only GSS participants who designated their occupation as a PK-12 teacher were included in this study.

Our study sample included 305 teachers. Ages of participants ranged from 20 to 89 with an average age of 51.8 ($SD = 17.9$). In terms of race/ethnicity, 83.0% of teachers were White, 9.5% were Black, and 7.5% were another race/ethnicity (i.e., Asian, American Indian, Hispanic/Latino/Latina, or multiracial). In terms of gender, 84.3% were female and 15.7% were male. The vast majority (96.1%) of teachers identified as heterosexual and 3.9% identified as gay, lesbian, bisexual, or questioning. The average years of education received by teachers was 17.0 ($SD = 1.9$); thus, many participants had a 4-year college degree, some had a master's-level education, and few had a doctoral degree. The majority of teachers (65.2%) labelled themselves as middle class, 30.9% indicated that they were working class, 2.6% identified as upper class, and only 1.0% of teachers identified as lower class. Teachers' school grade levels ranged with 14.4% for pre-kindergarten or kindergarten, 48.5% for primary school, 33.1% for secondary school, and 3.9% for special education. In terms of geographic location, 38.4% of teachers were from the South, 22.3% were from the Midwest, 20.7% were from the Northeast, 11.1% were from the Pacific region, and 7.5% were from the Mountain region.

2.2 Variables and measures

2.2.1 LGBQ-related attitudes

Five items were used in the GSS to measure participants' LGBQ attitudes; these items primarily focused on homosexuality, which has implications for the LGBQ community. First, participants were asked to rate the morality of sexual relations between adults of the same sex using a 5-point Likert-type scale ranging from 0 (*not wrong at all*) to 4 (*always wrong*). Second, participants were asked to rate their level of agreement/disagreement about the right to same-sex marriage using a 5-point Likert-type scale ranging from 0 (*strongly agree*) to 4 (*strongly disagree*). Third, participants were asked if a gay man should be allowed to make a speech in their community, and response options ranged from 0 (*allowed*) to 2 (*not allowed*). Fourth, participants were asked if a gay man should be allowed to teach at a college or university, and response options ranged from 0 (*allowed*) to 2 (*not allowed*). Fifth, participants were asked if a book written by a gay man supporting homosexuality should be removed from the public library, and response options ranged from 0 (*not remove*) to 2 (*remove*). A composite score for LGBQ attitudes was attained by averaging the responses to these five items; thus, higher scores indicated more negative LGBQ-related attitudes. The internal consistency reliability of this five-item set was $\alpha = .70$, which was acceptable (DeVellis 2012). And, the Spearman-Brown coefficient was .87, which demonstrates good split-half reliability. In terms of content validity, a confirmatory factor analysis with weighted least squares mean and variance-adjusted estimation was used because the data were ordinal, and results showed standardized factor loadings ranging from .77 to .98 and all were statistically significant. The attitude measure also

has evidence of divergent validity because there is a significant and large correlation between LGBQ attitudes and political conservatism ($r = .49$, $p < .01$), which is well-established in prior research and theory (see citations in the introduction).

To examine the prevalence of negative, positive, and neutral or uncertain attitudes, certain responses were grouped. For item 1, responses of *not wrong at all* were considered positive attitudes; *don't know* were considered uncertain; and *sometimes wrong*, *almost always wrong*, or *always wrong* were considered negative attitudes. For item 2, *strongly agree* or *agree* were considered positive, *neither agree nor disagree* was considered neutral, and *disagree* or *strongly disagree* were considered negative. For items 3 and 4, *allowed* was considered positive, *don't know* was considered uncertain, and *not allowed* was considered negative. For item 5, *not remove* was considered positive, *don't know* was considered uncertain, and *remove* was considered negative.

2.2.2 Demographics

Relevant demographic variables included age, race/ethnicity, gender, sexual orientation, educational level, and economic class. Race/ethnicity included White, Black, and other (i.e., Asian Americans, American Indians, Hispanic/Latino/Latina Americans, and multiracial individuals). Gender included female and male. Participants' age was measured in years. Educational level was measured as the highest number of years of schooling completed. Economic class was measured using a self-report question and response options included lower class, working class, middle class, and upper class.

2.2.3 Geographic area

The region of the country participants were in at the time of the interview included the Northeast, South, Midwest, Mountain, and Pacific. Northeastern states included ME, VT, NH, MA, CT, RI, NY, NJ, and PA. Southern states included DE, MD, WV, VA, NC, SC, GA, FL, DC, KY, TN, AL, MS, AR, OK, LA, and TX. Midwestern states included WI, IL, IN, MI, OH, MN, IA, MO, ND, NE, and KS. Mountain states included MT, ID, WY, NV, UT, CO, AZ, and NM. Pacific states included WA, OR, CA, AK, and HI. The level of urbanicity to rurality of the area participants lived in was measured using a 10-point scale that ranged from 0 (*large city*) to 9 (*open country*); thus, higher values indicate a more rural area.

2.2.4 Political orientation

Political orientation was measured using a 7-point Likert-type scale, with response options that ranged from 0 (*extremely liberal*) to 6 (*extremely conservative*). Thus, higher scores indicate higher levels of political conservativism.

2.2.5 Religiosity

Four variables measured participants' religiosity. The extent that participants' considered themselves religious was measured on a 4-point Likert-type scale ranging from 0 (*not religious*) to 3 (*very religious*). Frequency of attending religious services ranged from 0 (*never*) to 10 (*several times a day*). Thus, higher scores indicate higher levels of religious identification and participation. Participants were also asked if their religion was liberal, moderate, or fundamentalist. And finally, respondents were asked to rate the extent to which they try to carry their religious beliefs over into other areas of their lives using a 5-point Likert-type scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*).

2.3 Data analysis

Prior to analysis, a number of diagnostics were performed using Stata (version 14) to examine the linearity between the independent and dependent variables, the distributions of the residuals, the distributions of the independent and dependent variables, influential outliers, heterskedasticity, multicollinearity, and missing values. Plots showed no clear departures from linearity, and the residuals were approximately normally distributed for the dependent variable. All of the non-categorical variables were approximately normally distributed, which included age, education level, urbanicity/rurality of the area, political orientation, religiousness, frequency of attending religious services, carryover of religious beliefs, contact with LGBQ people, and the LGBQ attitudes score. No cases of influential outliers (Cook's distance values >1) were found, and no significant heteroskedasticity problems were found. We also examined variance inflation factor (VIF) scores to check for multicollinearity. Serious multicollinearity problems (i.e., VIF >3) did not exist. Missing values were also examined. Some questions on the GSS are asked every wave, whereas other questions are only included in certain waves. For this study, sexual orientation was not measured in 2006, and the question about carryover of religious beliefs into other areas of life was not measured in 2012 or 2014. Aside from those two variables, no item had more than 4% missing responses. Excluding those two variables, missing value analysis indicated that missing data values did not differ from a pattern "missing completely at random" (MCAR; Little and Rubin 1987, p. 14) based on Little's MCAR test: $\chi^2(115)=132.22$, $p=.13$. Given the missing values for certain years on two variables and the limited amount of randomly missing values in general, full information maximum likelihood (FIML) was used to handle missing data, which allows for all cases to be included in analyses, even if they are missing values on some variables. Descriptive analyses and regression models were run using Stata (version 14) with maximum likelihood estimation for missing values (i.e., FIML).

Table 1 Response percentages for teacher LGBQ attitude items (N = 305)

Item	Positive attitudes (%)	Negative attitudes (%)	Uncertain or neutral (%)
Same-sex sexual relations	47.2	48.1	4.7
Same-sex marriage	51.5	35.9	12.6
Gay person giving a speech in your community	92.4	6.3	1.3
Gay person teaching at a college or university	90.8	8.9	0.3
Book about homosexuality in the public library	84.8	14.2	1.0

Table 2 Means, standard deviations, and intercorrelations for continuous variables

Variable	*M* (*SD*)	1	2	3	4	5	6	7	8
1. LGBQ attitudes score	0.85 (0.79)	–							
2. Age	51.83 (17.87)	.16*	–						
3. Years of education	16.99 (1.92)	−.14*	.11*	–					
4. Urbanicity to rurality	4.00 (2.58)	.06	.16*	−.02	–				
5. Political orientation	3.03 (1.45)	.49*	.00	−.09	.08	–			
6. Religious identification	1.80 (0.93)	.42*	.09	−.08	.03	.34*	–		
7. Religious service attendance	2.86 (2.51)	.40*	.07	−.04	.07	.23*	.52*	–	
8. Carryover of religious beliefs	3.02 (1.17)	.40*	.12	−.20	.05	.23*	.54*	.36*	–
9. Wave year	2009.79 (3.02)	−.24*	−.01	.08	−.07	−.12*	−.07	−.11	−.02

*$p < .05$

3 Results

Descriptive results presented in Table 1 showed that teachers' attitudes varied somewhat depending on whether the attitude item assessed the morality of homosexuality versus civil liberties and civil rights of LGBQ people. For example, in terms of morality, 48% of teachers had negative attitudes about homosexuality and 47% had positive attitudes. However, in terms of the civil liberties and civil rights (e.g., the right to marry and freedom of speech), attitudes were generally more positive. Table 2 shows the means, standard deviations, and intercorrelations for the non-categorical study variables. Age, political conservatism, and religiosity were positively correlated with negative LGBQ attitudes. Years of education and GSS wave year were inversely correlated with attitudes.

Results of the multivariate linear regression analysis predicting LGBQ attitudes using demographic, geographic, and social variables are shown in Table 3. The independent variables accounted for a significant amount of the variance in LGBQ attitudes ($R^2 = .47$). In terms of demographics, teacher age was positively associated with attitudes, thus, older teachers tended to have more negative LGBQ attitudes than younger teachers. In addition, teachers of color tended to have more negative

Table 3 Regression analysis predicting LGBQ teacher attitudes

Independent variable	*B*	*SE B*	95% CI	β
Age	0.01*	0.00	[0.00, 0.01]	.14*
Race (White)				
Black	0.32*	0.13	[0.06, 0.57]	.12*
Other (i.e., Asian, American Indian, and Hispanic)	0.39*	0.14	[0.12, 0.66]	.13*
Gender (female = 1)	0.10	0.10	[−0.10, 0.29]	.04
Sexual orientation (heterosexual = 1)	0.19	0.26	[−0.32, 0.71]	.05
Years of education	−0.03	0.02	[−0.06, 0.01]	−.07
Socioeconomic class (lower class)				
Working class	0.39	0.34	[−0.27, 1.05]	.23
Middle class	0.38	0.33	[−0.27, 1.03]	.23
Upper class	0.17	0.39	[−0.60, 0.93]	.03
Teacher type (Pre-kindergarten and kindergarten)				
Primary school	0.06	0.11	[−0.15, 0.27]	.04
Secondary school	0.06	0.12	[−0.17, 0.30]	.04
Special education	−0.19	0.20	[−0.58, 0.21]	−.05
Geographic region (South)				
Northeast	−0.23*	0.10	[−0.42, −0.04]	−.12*
Midwest	−0.09	0.09	[−0.27, 0.09]	−.05
Mountain	−0.09	0.14	[−0.36, 0.18]	−.03
Pacific	−0.33*	0.12	[−0.57, −0.09]	−.13*
Urbanicity to rurality of area	−0.01	0.01	[−0.04, 0.02]	−.03
Political orientation	0.18*	0.03	[0.13, 0.23]	.33*
Religious identification	0.02	0.05	[−0.08, 0.13]	.02
Religious service attendance	0.05*	0.02	[0.02, 0.08]	.15*
Religious orientation (liberal)				
Moderate	0.01	0.08	[−0.14, 0.18]	.01
Fundamentalist	0.21*	0.11	[−0.00, 0.42]	.11*
Carryover of religious beliefs	.11*	0.05	[0.02, 0.21]	.17*
Wave year	−0.03*	0.01	[−0.06, −0.01]	−.13*

$R^2 = .47$ ($N = 305$, $p < .001$). CI = confidence interval for *B*. White is the reference group for race/ethnicity. Gender was coded 0 = male, 1 = female. Sexual orientation was coded 0 = lesbian, gay, bisexual, or questioning, and 1 = heterosexual. Lower class is the reference group for socioeconomic class. The South is the reference group for geographic region. Liberal is the reference group for religious orientation. Pre-kindergarten or kindergarten teacher is the reference group for teacher type

*$p < .05$

attitude than White teachers. Nonetheless, male and female teachers did not significantly differ on LGBQ attitudes. Nor did heterosexual and LGBQ teachers differ on attitudes. Years of education, economic class, and teachers' school grade level were unrelated to attitudes. In terms of geographic area, teachers in the Northeast and Pacific regions had significantly more positive attitudes than teachers in the South. Teachers in the Midwest and Mountain regions did not significantly differ

in attitudes from teachers in the South. The urbanicity/rurality of the area teachers were in was unrelated to attitudes. Political orientation was strongly related to attitudes with higher levels of conservatism associated with more negative LGBQ attitudes. In terms of religiosity, religious identification was unrelated to attitudes; however, more frequent attendance of religious services was associated with more negative attitudes. Further, carrying one's religious beliefs into other areas of life was also associated with more negative attitudes. Regarding the orientation of one's religion, teachers with liberal and moderate religions did not significantly differ on LGBQ attitudes; however, teachers with a fundamentalist religion had significantly more negative attitudes than teachers with a liberal religion. Finally, wave year was inversely related to attitudes, which suggests that teachers' attitudes became more positive over time.

4 Discussion

4.1 Prevalence of teachers' positive, negative, and neutral or uncertain LGBQ attitudes

This study used recent nationally representative U.S. data to examine PK-12 school teachers' explicit attitudes about homosexuality and LGBQ people. In terms of the prevalence of positive and negative attitudes about LGBQ people, almost half of teachers exhibited negative attitudes on at least one attitudinal item. When compared to the general population during the same time period, teachers exhibited slightly more positive LGBQ attitudes than Americans in general (National Opinion Research Center 2014). Nonetheless, teachers were sharply divided on the morality of same-sex sexual relations, with few indicating uncertain attitudes about this issue. Slightly more positive attitudes were found around the issue of same-sex marriage, though, the data were collected prior to the 2015 *Obergefell v. Hodges* decision in which the Supreme Court struck down bans on same-sex unions. Thus, teachers' attitudes about same-sex marriage may have shifted in a positive direction since that decision. Results from a 2016 Gallup poll about legal recognition of same-sex marriage showed that 61% of Americans indicated that same-sex unions should be valid, up from 55% of Americans in a 2014 poll (McCarthy 2016). Teachers' attitudes were largely positive around other civil liberties, including allowing gay people to give speeches in the community and to teach at colleges and universities. Broader support for these issues may be because they relate to freedom of speech and protection from employment discrimination. A recent poll found that 71% of Americans support laws that would protect LGBQ people from discrimination in employment, housing, and public accommodations (Cooper et al. 2016). Our study results showed broad teacher support for allowing a book written by a gay person in favor of homosexuality to be in the public library; however, almost 15% of teachers were against this. Efforts have been made to move books on LGBQ topics for children (e.g., *Heather Has Two Mommies*) to the adult section of the public library, as well as to remove LGBQ-themed books (e.g., *Lives of Notable Gay Men and Lesbians*) from

school libraries; however, court rulings reversed these efforts because they violated First Amendment rights to receive information (Emert 2006).

4.2 Change in teachers' LGBQ attitudes over time

This study also examined changes in teachers' LGBQ attitudes since 2006 and found more positive LGBQ attitudes as time progressed. This finding mirrors trends among Americans in general, which show more positive LGBQ attitudes over time (Pew Research Center 2017; Saad 2012). This trend may be due to LGBQ people being more visible in society. In a 1992 poll, Americans were asked if they knew an LGBQ person and only 42% indicated that they did; whereas, the same question was asked in 2010 and 77% of Americans indicated they knew an LGBQ person (Montopoli 2010). Research shows that having contact with LGBQ people is associated with more positive attitudes (Barth et al. 2009; Bowen and Bourgeois 2001; Herek and Capitanio 1996; Herek and Glunt 1993; Iraklis 2010; Lemm 2006; Lewis 2011; Sakalli 2002). The trend may also stem from younger generations being more accepting of LGBQ people. As older generations who generally exhibit more negative attitudes pass away, they are replaced by younger generations who generally exhibit more positive attitudes (Andersen and Fetner 2008; Avery et al. 2007).

4.3 Factors associated with teachers' LGBQ attitudes

Significant factors associated with teachers' LGBQ attitude scores include age, race/ethnicity, geographic region, political orientation, and religiosity. Our findings showing slightly more negative attitudes among teachers of color coincide with those from Mudrey and Medina-Adams (2006). This racial/ethnic difference may be due to religious culture. Black Americans and Latinos/Latinas are generally more religious than White Americans (Newport 2011), and many religious organizations oppose same-sex unions (Masci and Lipka 2015). More frequent exposure to negative messages about homosexuality from religious leaders or other institutions, such as schools, is likely to cement negative attitudes toward LGBQ people (Schwartz 2010). Nonetheless, the proportion of religious congregations who are accepting of LGBQ people has grown recently (Masci 2014); thus, it should not be assumed that religious Americans possess negative and static views of LGBQ people or that people of color uniformly possess negative attitudes. Teachers' political orientation seemed to be the strongest predictor of attitude scores. LGBQ rights have historically been supported by political liberals and opposed by conservatives (Pew Research Center 2017; Sherkat et al. 2011).

Regarding gender comparisons, our findings did not show statistically significant differences in attitudes between male and female teachers, which support findings from Mudrey and Medina-Adams (2006) and Wyatt et al. (2008). Surprisingly, a statistically significant difference in attitudes between heterosexual and LGBQ teachers was not found in the regression analysis. This may have stemmed from the small number of LGBQ teachers in the sample. Descriptive statistics did show that LGBQ teachers' attitude scores were more positive than the heterosexual teachers.

Our findings showing no significant relations between attitudes and teachers' education level or teacher type align with findings from O'Connell et al. (2010) and Mudrey and Medina-Adams (2006). A national survey of elementary and secondary teacher preparation programs found that sexual orientation diversity was the least emphasized area of diversity (Jennings 2007); thus, it is likely that LGBQ issues are not addressed in teacher education across level or specialty in ways that would significantly impact LGBQ attitudes.

4.4 Improving teachers' LGBQ attitudes

Given the prevalence of negative LGBQ attitudes found among teachers, coupled with the vulnerability and marginalization of LGBQ students, the need to address teachers' attitudes is imperative. Targets of focus may include addressing negative attitudes that isolate or stigmatize LGBQ students in the classroom, as well as cultivating positive attitudes among teachers so that they can affirm and advocate for their LGBQ students. Preservice teacher education programs have incorporated diversity-related topics into their curricula for several decades; however, research shows that the incorporation of sexual orientation diversity topics is limited (Jennings 2007). Nonetheless, evidence-informed interventions are available. For example, Riggs et al. (2011) evaluated a 3-h intervention with preservice teachers that included an overview of LGBQ-related terms, discussion about important values in education (e.g., equality and dignity), position statements from education-related associations about LGBQ students, narratives and statistics about the hostile school environment for LGBQ youth, discussion and reflection activities about diversity and positive and negative attitudes, myths and stereotypes about LGBQ people, and strategies for teachers to use in the classroom to address LGBQ issues. The researchers found that the intervention led to improved attitudes about LGBQ people, more accurate knowledge about homosexuality and the issues facing LGBQ people, and increased likelihood of engaging in supportive behaviors for LGBQ students (Riggs et al. 2011).

Evidence from in-serve professional development interventions is also promising. A 2-day training with New York City educators aimed at increasing educators' capacity to intervene in anti-LGBQ harassment and bullying, to be a resource and support for LGBQ students, and to be a resource for other school personnel regarding LGBQ issues (Greytak and Kosciw 2010). The training involved a variety of activities (e.g., mini-lectures, videos, reflection activities, group discussions, and role-plays), and outcome evaluation findings showed increases in knowledge of LGBQ terms, empathy for LGBQ students, understanding the importance of and feeling comfortable to intervene with anti-LGBQ remarks, frequency in intervening in anti-LGBQ harassment, and engagement in efforts to create a safer school climate for LGBQ students (Greytak and Kosciw 2010). Another study demonstrated that even a brief, 2-h version of the training led to increased understanding of LGBQ students' school experiences, confidence to create an inclusive school climate for LGBQ students, and competence to intervene in anti-LGBQ bullying (Greytak et al.

2013). Thus, empirically-supported interventions are available to address attitudes and related outcomes among current and future teachers.

4.5 Limitations

This study has several limitations. First, the repeated cross-sectional design prevents causal analysis; thus, we do not know if the factors significantly associated with teachers' attitudes were causal in nature or simply correlational. Second, given that this study used secondary data, there are a number of independent variables that were not included in the analyses, yet have been shown to relate to LGBQ attitudes among Americans in general. For example, research shows that having contact with LGBQ people is associated with more positive attitudes (Barth et al. 2009; Bowen and Bourgeois 2001; Herek and Capitanio 1996; Herek and Glunt 1993; Iraklis 2010; Lemm 2006; Lewis 2011; Sakalli 2002). In the 2006 wave of the GSS, a few questions about contact with LGBQ people were asked; however, too few teachers were asked these questions to include a contact variable in the analyses for this study. Finally, two of the questions about LGBQ-related attitudes focused on gay men as opposed to LGBQ people or issues in general.

4.6 Future research

In addition to examining teachers' explicit attitudes, future research could also capture teachers' implicit attitudes. Both explicit and implicit bias based on sexual orientation can influence individuals' behaviors (Greenwald et al. 2009). Additionally, research shows that implicit prejudice is more prevalent than explicit prejudice (Nosek et al. 2007). Teachers may be unaware of their deeply ingrained negative attitudes or stereotypes about LGBQ people, which may unknowingly influence their work with LGBQ students. Future studies might also examine attitudes among others in the school community (e.g., education support professionals, administrators, counselors, psychologists, social workers, and nurses). School administrators typically establish a code of conduct and norms for both students and teachers to abide. In one study, the views of school leaders about LGBQ advocacy significantly predicted teachers' intention to intervene during instances of anti-LGBQ harassment and bias (McCabe et al. 2013). In the future, researchers might also investigate under what conditions do negative teacher attitudes lead to negative behaviors toward sexual minority students, as well as conditions that promote affirmative actions for these students. Relevant variables might include individual characteristics of teachers, as well as school contextual factors. Finally, while many sexual minority students face hostile school climates, research shows that gender minority students (e.g., transgender, genderqueer, and gender non-binary) also face oppression in the school environment (Greytak et al. 2009; McGuire et al. 2010). Future research should investigate teachers' attitudes about gender minorities, how these attitudes might influence their interactions with gender minority students and the broader school climate around gender, and how teachers can advocate for gender minority students. Regardless of personal beliefs, teachers have an ethical responsibility to provide all students,

regardless of sexual orientation or gender, with a quality education in a safe learning environment.

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