

# Differences in Christian Attitudes Towards Lesbian, Gay, Bisexual, and Trans-individuals: Their Covariates and Interaction Effects

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#### **Abstract**

Recently, studies have found majority status, gender and age are related to prejudice towards sexual minorities, yet very few studies have provided separate analysis of the individuals within the monolithic LGBT acronym. To date, studies have shown religiosity, political orientation, belief about the origin of homosexuality and attitudes towards science are correlated to biases towards LGBT identities, but less have examined interaction effects between those covariates. Here, we conduct a study to investigate differences in Christian attitudes towards the separate individuals within the LGBT acronym by gender and age as well as the underlying schemas that are attributed to that prejudice. Christian participants provided demographic information and measures of political orientation, religiosity, attitudes towards science and belief about the etiology of homosexuality then gave their attitudes towards LGBT individuals. Average total prejudice was significantly greater (p < 0.001) for heterosexual male participant's (N=123, Mage= 34) than heterosexual female participants (N=41, Mage = 24). Generation Z participants (N=71, Mage = 20.83) displayed significantly lower (p < 0.004) prejudice than Generation Y participants (N=80, Mage = 32.11). Additionally, OLS regressions support previous research that Christian attitudes towards LGBT individuals significantly relate to conservative political beliefs  $(p < 0.001, R^2 = 0.34)$ , high religiosity  $(p < 0.001, R^2 = 0.26)$ , belief about the origin of homosexuality (p < 0.01,  $R^2$  = 0.43) and negative attitudes towards science (p < 0.001,  $R^2$  = 0.5). Further, the interaction effects of these covariates show differences and similarities for attitudes towards homosexual, bisexual, and trans-individuals. This study demonstrates that attitudes towards LGBT identities are more nuanced than previously reported and that a separate analysis should be performed for the individuals within the subgroups of LGBT when investigating attitudes towards the LGBT community.

**Keywords** Bible Belt, Christians, Lesbian, Gay, Bisexual, Transgender, Prejudice, Attitudes, Politics, Religion, Church attendance, Biblical literalism, Science

#### Methods

### **Participants**

Participants (N=179) were obtained from three sampling rounds of US bible belt Christians who were born in the United States, have never lived abroad for more than six months, and were

currently residing in a bible belt State (AL, AR, GA, KY, LA, MS, NC, OK, SC, TN, TX, and UT). Bible belt States have the highest ratio of Christians in the United States and therefore the Christian participants of this study are from the majority religious group in their area (Doan, 1998). We specifically sampled majority group members because prior research had theorized that Christians of predominantly Christian countries showed less tolerance towards homosexuals than Christians from predominantly Buddhist countries when primed with a religious outgroup message (Vilaythong T. et al, 2010). Christian attitudes towards LGBT individuals were chosen because past research has shown they demonstrate low tolerance of the LGBT community (Whitehead, 2012). Participants (Mage = 31, range = 18-79) consented to participate and were predominantly heterosexual men (75%, N=123) and white (82%).

#### Data

The data for this project was obtained from paid and volunteer participation pools. Paid participants received \$2.40 (approx. 9.60/hr.) Most of the participants (70%) were from the paid participation pool. Undergraduate students from a voluntary university participation pool obtained extra credit for participating in the study and were recruited from students taking classes in psychology at a public university from a bible belt state. All respondents with missing, incomplete data or that were not from a bible belt state were eliminated from analyses.

### **Golden Rule Priming**

Conceptually replicating a study by Vilaythong T. and colleagues (2010), participants were divided into two conditions (1) a Buddha primed golden rule and (2) a Jesus primed golden rule. In both groups participants evaluated five paraphrased quotations by choosing the best word to fill in the blank. The first and last fill in the blank sentence was either a Buddha-attributed golden rule or a Jesus-attributed golden rule depending on which condition the participants were in. The Jesus phrase was "Do unto others as you would have them do unto <u>you</u>" and the Buddha phrase was "Never hatred is hatred appeased, but it is appeased by <u>kindness</u>." The underlined words are the correct option of three options that participants selected to fill in the blank. The three middle quotations were the same for both groups and not relevant to a religious social group. "All the world's a <u>stage</u>. – William Shakespeare," "Imagination is more <u>important</u> than knowledge. -Albert Einstein," and "If you come to a fork in the road, take it. – Yogi Berra."

# **Dependent Variables**

To measure attitudes toward LGBT individuals three separate scales were used. Each of the three scales measures attitudes towards either homosexual, bisexual, or transgender individuals and importantly divides them by gender for a total of six separate scales.

#### **Attitudes Towards Lesbian Women and Gay Men**

Herek (1994) created the Attitudes Towards Lesbians and Gay Men Scale (ATLG). In 1994 he created the Short Version which was a selection of five attitudes that were highly correlated with the ATLG score. This Short Version (ATLG-S) has been popularized by social scientists studying university students and separates into two subscales with five questions on lesbian women and five questions on gay men. Some criticisms of the well-used ATLG-S are its

simplicity and length (Siebert et al., 2014) but Herek & McLemore (2011) suggest the use of the short version over the full ATLG scale. See Table 3 for the ATLG-S scale.

#### **Attitudes Towards Bisexual Women and Bisexual Men**

To measure attitudes towards bisexual individuals we used the Abridged Bisexualities: Indiana Attitudes Scale (BIAS) (Dodge et al., 2016). The BIAS contains two subscales, one that measures attitudes towards bisexual females (BIAS-f) and the other towards bisexual males (BIAS-m). The BIAS scales have five items per subscale with a Likert-type response. See Table 4 for the BIAS scale.

### Attitudes Towards Transgender Women and Transgender Men

Billard (2018) performed three studies to generate, develop, and validate the Attitudes toward Transgender Men and Women (ATTMW) scale. The final generated scale consisted of a 24-item seven-point Likert-type scale. The scale is divided into two non-identical 12-items subscales with an Attitudes toward Transgender Men (ATTM) scale and attitudes toward Transgender Women (ATTW) scale. See Table 5 for ATTMW.

### **Independent Variables**

#### **Conservative Political Beliefs**

Respondents were asked to identify as (1) strongly liberal, (2) liberal, (3) somewhat liberal, (4) neither liberal or conservative, (5) somewhat conservative, (6) conservative, or (7) strongly conservative and (8) prefer not to say. Higher scores represent higher levels of political conservatism.

### **Levels of Religiosity**

Levels of religiosity were assessed with both church attendance and biblical literalism (Jelen et al., 1990). First, respondents were asked "How often do you go to church or attend religious ceremonies?" Respondent options were (1) weekly, (2) nearly weekly/monthly, (3) seldom/never (4) prefer not to say. A lower score represents higher levels of church attendance.

Second, respondents were asked "Which of these statements comes closest to describing your feelings about the Bible?" Available answers were (1) the bible is the actual word of God and is to be taken literally, word for word, (2) the Bible is the inspired word of God but not everything in it should be taken literally, word for word, (3) the Bible is an ancient book of fables, legends, history, and moral precepts recorded by men, (4) the Bible is a good book because it was written by wise men, but God had nothing to do with it, (5) prefer not to say. A lower score represents higher levels of biblical literalism.

#### **Attitudes Towards Science**

The Attitudes Towards Science Index was used to assess attitudes towards science (Whitehead & Baker, 2012). Using a 7-point Likert scale participants stated how much they agreed or disagreed with the following five statements. (1) Science will eventually provide the solutions to

most our problems, (2) Humans evolved from other primates over millions of years, (3) Creationism should be taught in public schools, (4) We rely too much on science and not enough on faith, (5) Most scientists are hostile to religion. The last three statements are reverse scored, and a higher score represents more negative attitudes towards science.

# **Etiological Belief of Homosexuality**

Belief regarding the origin of homosexuality was collected using a 6-type Likert scale stating levels of agreement/disagreement with two separate statements. "People are born as either homosexual or heterosexual" and "People choose to be homosexuals" (Whitehead and Baker, 2012).

## **Demographics**

Respondents gave their age, sexual orientation, gender, income, education level and ethnicity. Age was separated by generation in a separate analysis. Only Generation Z (N=71, Mage=20.83) and Generation Y (N=80, Mage=32.11) were compared because of lack of participants for Generation X (N=15, Mage=48.40) and baby boomers (N=11, Mage=66.36).

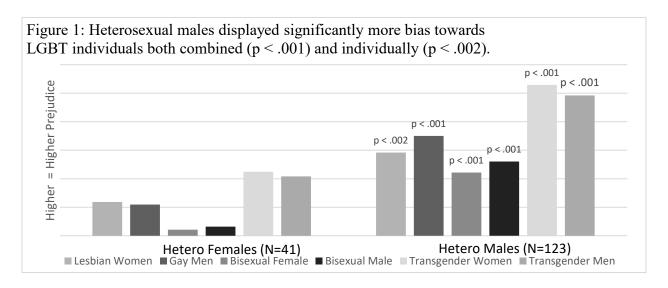
### **Method of Analysis**

First, mean attitude scores were compared by condition, gender and age using *t*-tests and ANOVAs as shown in figure 1, 2 and 3. Second, OLS regressions explored how measures of political beliefs, religion, belief on homosexuality, and attitudes towards science affect attitudes towards LGBT individuals. Table 1 displays how these covariates relate to Christian attitudes towards LGBT individuals. Table 2 shows the interaction effects between those covariates as they relate to prejudice. Figures 4 - 9 explore significant interaction effects.

#### Results

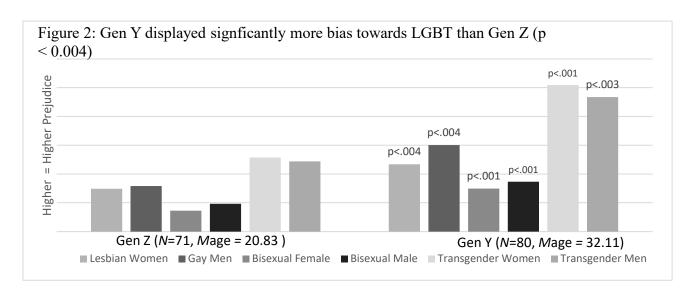
# **ANOVA Results by Gender**

Attitudes towards LGBT individuals were significantly different (p < 0.002) for heterosexual women and heterosexual men. For all attitudinal scales, heterosexual men reported the highest levels of prejudice towards LGBT individuals. Despite males averaging higher levels of prejudice towards all members of LGBT few differences exist between the covariates of men and women. The two main differences between male and female participants was (1) male participants (Mage = 34) were older than the female participants (Mage = 24) and (2) differences were found between men and woman's belief that homosexuality is a choice. Female participants "disagree(d)" that people choose to be homosexuals and male participants "somewhat agree(d)". Despite differences in belief about whether homosexuality is a choice both men and women "somewhat agree(d)" that people are born either homosexual or heterosexual. See figure 1 for ANOVA results displaying differences in prejudice between heterosexual Christian men and women.



### **ANOVA Results by Generation**

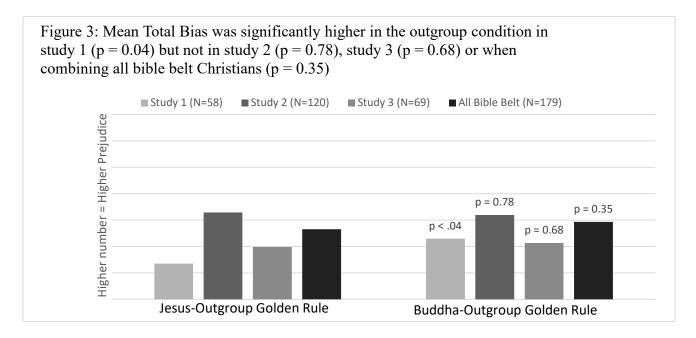
ANOVAs performed by age are significantly different (p < 0.004) such that on average older participants display more negative attitudes towards all LGBT individuals. Few differences were found in covariates between generations but Generation Z (N=71, Mage = 20.83) averaged "disagreeing" that homosexuality was a choice and Generation Y (N=80, Mage = 32.11) averaged "somewhat agreeing" that homosexuality was a choice. Further, the Gen Z participants were more gender fluid averaging between "mostly heterosexual" and "bisexual" and Gen Y participants averaging closest to "completely heterosexual". See figure 2 for ANOVA results displaying differences in prejudice levels between Gen Y and Gen Z.



#### t-Tests

The first round of participants (N=58) displayed significantly higher bias (p < 0.05) in the Buddha condition for mean total bias. Mean total bias was not higher in the Buddha outgroup condition in the second round (N=120), third round (N=69) or when comparing males and females. When comparing generations, generation Z (N=71) participants had a significant

increase in bias in the Buddha outgroup condition but only for gay men and lesbian women (p < .05). For all other the generations t-Tests for differences between the Jesus ingroup condition and Buddha outgroup condition were not significant. t-Tests when combining all bible belt Christians (N=179) found no significant difference between conditions. Overall, no difference was found between the Jesus ingroup and Buddha outgroup condition. See figure 3 displaying difference in prejudice between conditions.



# **Regression Results**

Table 1, Column 1 & 2: Attitudes Toward Lesbian Women and Gay Men When analyzing all bible belt Christians all covariates significantly relate (p < .001) to attitudes towards lesbian women and gay men. When analyzing men and women separately, among heterosexual men (N=123) all covariates significantly relate to attitudes towards homosexuals (p < .001). For heterosexual women (N=41) all covariates significantly relate (p < .05) to attitudes towards homosexuals except one; belief that "people were born homosexual" does not significantly relate to attitudes towards gay men (p = .085). For all bible belt participants, the covariates  $R^2$  values ranged from .15 - .54.

Table 1, Column 3 & 4: Attitudes Toward Bisexual Women and Bisexual Men All covariates significantly relate to attitudes towards bisexual women and bisexual men for all bible belt Christians (p <.01) and all heterosexual men (p <.01). For heterosexual women all covariates significantly relate (p <.05) to attitudes towards bisexuals except belief that "people were born homosexual. For all bible belt participants, the  $R^2$  values ranged from .004 - .364.

Table 1, Column 5 & 6: Attitudes Toward Transgender Women and Transgender Men When analyzing all Christians all covariates significantly relate (p <.001) to attitudes towards Transgender women and Transgender men. Among both heterosexual (p <.001) men and women (p <.05) all covariates significantly relate. For all bible belt participants, the covariates  $R^2$  values ranged from .12 - .45.

Table 1: All Covariates are significantly related to prejudice towards all the individual groups within LGBT for bible belt Christians with reported standard estimates

Attitudes Toward	Lesbian	Gay	Bisexual	Bisexual	Transgender	Trangender
	Women	Men	Women	Men	Women	Men
Innate (In)	0.663	0.877	0.330	0.432	0.782	0.767
Choice (Ch)	-0.920	-1.286	-0.759	-0.842	-1.224	-1.213
Political (P)	0.889	1.231	0.731	0.772	1.443	1.408
Church Attendance (CA)	-0.778	-0.865	-0.476	-0.532	-0.864	-0.802
Biblical Literalism (BL)	-1.665	-1.930	-1.072	-1.294	-1.878	-1.781
Science (Sci)	1.531	1.994	1.193	1.326	2.007	1.941
	* p < .05	** p < .01	*** p < .001			

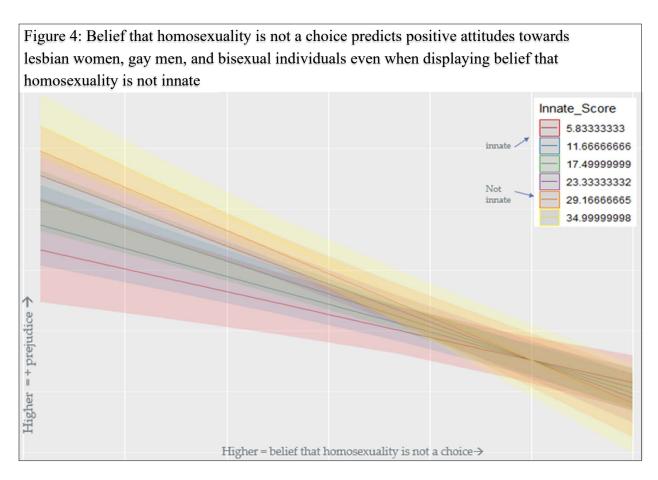
# **Regression Results with Interaction Effects**

Overall, all covariates were found to be significantly correlated to Christian attitudes towards LGBT individuals but not all the interaction effects of those covariates. Separate analysis of LGBT identities shows that the significance of interaction effects is different depending on both the covariates and the individuals within the LGBT acronym. Significant interaction effects are described below. See table 2 and figures 4-9.

Table 2: OLS Regressions showing interaction effects between covariates and the differences in interaction effects between individuals within LGBT with reported standard estimates

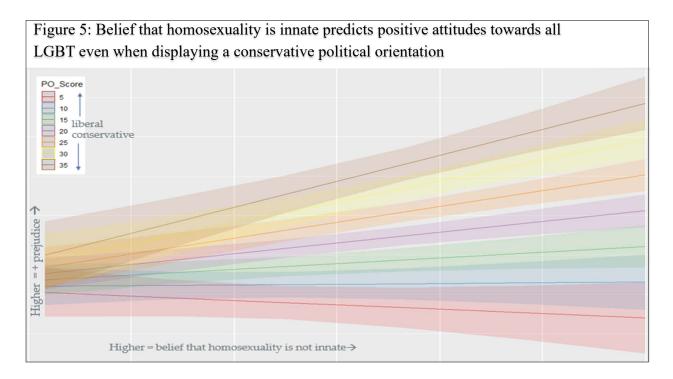
	Lesbian	Gay	Bisexual	Bisexual	Transgender	Trangender
Interaction effects	Women	Men	Women	Men	Women	Men
Innate*Choice	-0.029	-0.031	-0.020	-0.019	-0.011	-0.019
Innate*Political	0.051	0.045	0.027	0.023	0.029	0.032
Innate*Church Attendance	-0.023	-0.021	-0.010	0.000	-0.014	-0.019
Innate*Biblical literalism	-0.037	-0.023	-0.027	0.000	0.007	-0.002
Innate*Science	0.025	0.019	-0.006	-0.020	-0.018	-0.017
Choice * Political	-0.030	-0.025	-0.020	-0.020	-0.008	-0.005
Choice*Church attendance	0.014	0.015	0.012	0.009	-0.001	0.004
Choice*Bible Literalism	0.015	0.009	0.027	0.016	-0.024	-0.015
Choice*Science	-0.018	-0.016	0.002	0.004	0.029	0.031
Political*Church Attendance	-0.001	0.001	0.014	0.018	0.025	0.025
Political*Biblical Literalism	0.009	0.020	0.024	0.039	0.068	0.070
Political*Science	-0.002	0.006	-0.038	-0.034	-0.064	-0.068
Church attendance*Biblical Literalism	0.036	0.014	0.025	0.003	0.020	0.032
Church attendance*Science	-0.016	-0.020	-0.001	0.012	0.010	0.007
Biblical Literalism*Science	-0.034	-0.020	-0.039	-0.011	0.022	0.008
	* p < .05	** p < .01	*** p < .001			

Interaction effects between the belief about the innateness of homosexuality and the belief about whether homosexuality is a choice significantly relates to attitudes towards homosexuals and bisexuals but not Trans-individuals. On its own, the more that participants agreed that homosexuality is innate, the lower their bias towards LGBT identities. The opposite is true of the belief that homosexuality is a choice such that the more that participants agreed that homosexuality is a choice, the higher their prejudice. But when analyzing the interaction effects between the two covariates, measurements about the belief that homosexuality is a choice displays more gravity than measurements of whether it is innate. Christians who strongly agree that homosexuality is not a choice always display low bias towards homosexuals and bisexuals even when they strongly disagree that homosexuality is innate. See figure 4.



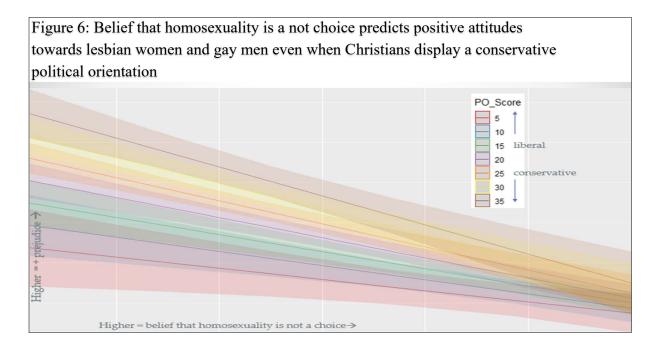
Belief about whether Homosexuality is Innate and Political Orientation, Table 2

Christian belief about whether homosexuality is innate and political orientation has significant interaction effects for attitudes towards all LGBT individuals. As displayed in table 1, a conservative political orientation is related to higher prejudice towards LGBT individuals, but regardless of political orientation, all participants who agreed that homosexuality is innate display low prejudice towards LGBT individuals. See figure 5.

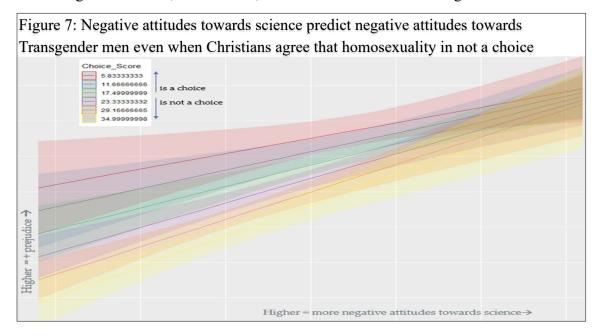


Belief that Homosexuality is a Choice and Political Orientation, Table 2

Belief that homosexuality is a choice and political orientation had significant interaction effects for only attitudes towards lesbian women and gay men. See figure 6 for results.

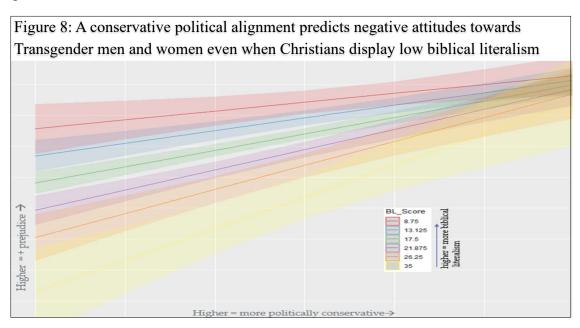


Among bible belt Christian participants, belief that homosexuality is a choice and attitudes towards science has significant interaction effects for attitudes towards Transgender men but not for Transgender women, homosexual, or bisexual individuals. See figure 7.

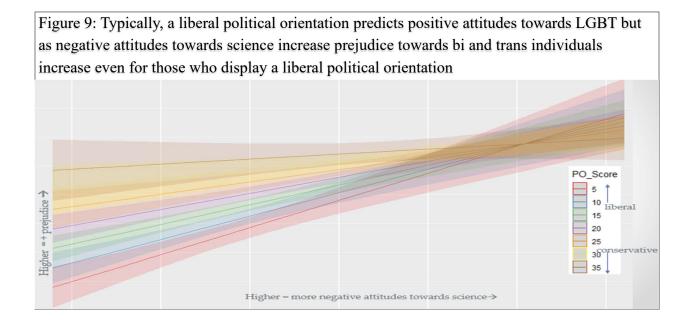


Political Orientation and Biblical Literalism, Table 2

Significant interaction effects between political orientation and biblical literalism are found for attitudes towards Transgender individuals but not for bisexual or homosexual individuals. See figure 8.



The interaction effects of political orientation and attitudes towards science are significant for bisexual and transgender individuals but not for homosexual individuals. Typically, a liberal political orientation is related to positive attitudes towards bi and trans individuals but Christians who display negative attitudes towards science display negative attitudes towards bi and trans individuals even when displaying a liberal political affiliation. See figure 9.



# **Attitude Scales**

Table 3 - Attitudes Towards Lesbians and Gay Men Scale - Short Ver	rsion - Herek, 1994
Attitudes Toward Lesbians subscale	<ul> <li>strongly disagree</li> </ul>
Attitudes Toward Lesotatis subscare	○ disagree
Please respond to the next series of items in terms of the extent that you ag	
the following statements about lesbians (i.e., women who are attracted sex	ually to osomewhat agree
women).	○ agree
1. Lesbians just can't fit into our society	<ul> <li>strongly agree</li> </ul>
<ul><li>2. Homosexual behavior between two women is just plain wrong.</li><li>3. Female homosexuality is a sin</li></ul>	O prefer not to say
<ul><li>4. Female homosexuality in itself is no problem, but what society n problem ®</li><li>5. Lesbians are sick.</li></ul>	
Attitudes Toward Gay Men subscale	® reverse scored
Please respond to the next series of items in terms of the extent that you ag statements about gay men (i.e., men who are attracted sexually to men).	ree with the following
1. Just as in other species, male homosexuality is a natural expressi human men ®	on of sexuality in
<ol> <li>Homosexual behavior between two men is just plain wrong.</li> <li>Male homosexuality is merely a different kind of sexual orientate condemned. ®</li> </ol>	ion that should <i>not</i> be
4. I think male homosexuals are disgusting.	
5. Male homosexuality is a perversion	® reverse scored

BIAS-female subscale	
Please respond to the next series of items in terms of the extent that you agree with statements about bisexual women (i.e., women with the capacity for physical, roma sexual attraction to more than one sex or gender).	· ·
	<ul> <li>Strongly disagree</li> </ul>
1. I think bisexual women are confused about their sexuality	○ Disagree
2. People should be afraid to have sex with bisexual women because of	<ul> <li>Somewhat disagree</li> </ul>
HIV/STD risks  2. Pigayyal waman are incomplete of being faithful in a relationship	<ul> <li>Somewhat agree</li> </ul>
<ul><li>3. Bisexual women are incapable of being faithful in a relationship.</li><li>4. Bisexual women would have sex with just about anyone</li></ul>	○ Agree
5. I think bisexuality is just a phase for women.	<ul> <li>Strongly agree</li> </ul>
or i minimic order tables a primate for welling.	O prefer not to say
BISA-male subscale	
Please respond to the next series of items in terms of the extent that you agree with statements about bisexual men (i.e. men with the capacity for physical, romantic, at attraction to more than one sex or gender).	
1. I think bisexual men are confused about their sexuality	
2. People should be afraid to have sex with bisexual men because of HIV/S'	TD risks
3. Bisexual men are incapable of being faithful in a relationship.	
4. Bisexual men would have sex with just about anyone.	
5. I think bisexuality is just a phase for men.	

Table 5 - Attitudes Towards Transgender Men and Women (ATTMW) - Billard 2018				
Attitudes Towards Transgender Men (ATTM) subscale				
Please respond to the next series of items in terms of the extent that you statements about transgender men (i.e., people who were identified as j birth but who currently live their daily lives as men.)	_	v		
<ol> <li>Transgender men will never really be men</li> <li>Transgender men are not really men</li> <li>Transgender men are only able to look like men, but not be men</li> <li>Transgender men are unable to accept who they really are</li> <li>Transgender men are trying to be someone they're not</li> <li>Transgender men seem absolutely normal to me ®</li> <li>Transgender men are denying their DNA</li> <li>Transgender men cannot just "identify" as men</li> <li>Transgender men are misguided</li> <li>Transgender men are unnatural</li> <li>Transgender men don't really understand what it means to be a man</li> <li>Transgender men are emotionally unstable</li> </ol>	0 0 0 0 0	strongly disagree disagree somewhat disagree Somewhat agree agree strongly agree prefer not to say		
Attitudes Towards Transgender Women (ATTW) subscale	(K)	reverse scored		
Please respond to the next series of items in terms of the extent that you statements about transgender women (i.e., people who were identified a birth but who currently live their daily lives as women.)  1. Transgender women will never really be women 2. Transgender women are only able to look like women, but not be wo 3. Transgender women are not really women 4. Transgender women are trying to be someone they're not 5. Transgender women are unnatural 6. Transgender women don't really understand what it means to be a wo 7. Transgender women cannot just "identify" as women 8. Transgender women are unable accept who they really are	as mai			
<ul> <li>9. Transgender women only think they are women</li> <li>10. Transgender women are defying nature</li> <li>11. Transgender women are denying their DNA</li> <li>12. There is something unique about being a woman that transgender women</li> </ul>		o prefer not to say		
experience				

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