

Actitudes Hacia la Homosexualidad en Estudiantes de Licenciatura Panameños de Psicología, Ingeniería y Bellas Artes

Attitudes Toward Homosexuality Among Panamanian Undergraduate Students of Psychology, Engineering, and Fine Arts

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Resumen

Las actitudes hacia la homosexualidad han mejorado alrededor del mundo; pero, la mejoría no se ha producido por igual en todos los países y territorios. Varios estudios han evaluado las actitudes hacia las personas LGBTQAI+ en estudiantes universitarios, sin embargo, la forma en la cual el género, los programas de estudio, la religiosidad intrínseca, y el racismo moderno juegan un papel en las actitudes hacia la homosexualidad en estudiantes universitarios aún es incierto. Este estudio transversal pretende examinar las actitudes hacia la homosexualidad entre 173 estudiantes universitarios de la Universidad de Panamá, evaluando el rol de factores sociodemográficos (género y programa) y estructurales (religiosidad y racismo moderno). Aquellos estudiantes universitarios de 18 años o más matriculados en un programa de licenciatura en psicología, ingeniería o bellas artes fueron elegibles para este estudio. La muestra incluyó 79 estudiantes de licenciatura en psicología (46,0%), 57 de ingeniería (33,0%) y 37 de bellas artes (21,0%). Los participantes respondieron a la Escala de Actitudes hacia Lesbianas y Hombres Gay (ATLG), la Escala del Racismo Moderno y la Escala de Actitudes hacia el Cristianismo de Francis. Se encontró altos niveles de homonegatividad entre estudiantes universitarios panameños, con hombres y estudiantes de ingeniería reportando actitudes negativas en un mayor porcentaje en comparación con otros grupos. Los resultados demostraron una correlación positiva entre la homonegatividad y la religiosidad intrínseca, mientras esta correlación no se encontró en cuanto al racismo moderno. Un área de estudio interesante relacionada con esta investigación es evaluar el impacto de la orientación sexual o de tener conocidos LGBTQAI+ sobre las actitudes hacia la homosexualidad entre los panameños. A futuro, estudios deberán explorar cambios longitudinales en las actitudes hacia las minorías sexuales en Panamá e informar futuras intervenciones para prevenir la discriminación y promover el bienestar de panameños LGBTQAI+.

Palabras clave: estudiantes universitarios, homonegatividad, LGBTQ+, religiosidad, racismo.

Abstract

Attitudes toward homosexuality have improved worldwide; however, these changes have not occurred equally across all countries and territories. Extensive research has assessed attitudes toward LGBTQAI+ individuals among college students. Yet, the way in which gender, degree programs, intrinsic religiosity, and modern racism play a role in the attitudes toward homosexuality among college students remains unclear. This cross-sectional study examines attitudes toward homosexuality among 173 undergraduate students from the

University of Panama, evaluating the role of sociodemographic factors (gender and degree program) and structural factors (religiosity and modern racism). Undergraduate students 18 years or older who were enrolled in a degree program in psychology, engineering, and fine arts schools were eligible for this study. Participants included 79 undergraduate students from psychology (46.0%), 57 from engineering (33.0%), and 37 from fine arts (21.0%). Respondents completed the Spanish versions of the Attitudes Toward Lesbians and Gay Men Scale, the Modern Racism Scale, and the Francis Scale of Attitude Towards Christianity. Results suggest the presence of homonegativity among Panamanian undergraduates, with males and engineering students reporting greater negative attitudes compared to all other groups. Intrinsic religiosity is positively correlated with homonegativity, while sublimated racism is not correlated with homonegativity. An interesting area of study related to this research is the impact of self-reported sexual orientation or having LGBTQAI+ acquaintances upon attitudes toward homosexuality among Panamanians. Further research is necessary to explore long-term changes in attitudes toward sexual minorities in Panama and to justify interventional efforts to prevent discrimination and promote well-being among LGBTQAI+ Panamanians.

Keywords: college students, homonegativity, LGBTQ+, religiosity, racism

Introduction

Attitudes toward homosexuality have improved worldwide, including in Latin America; however, these changes have not occurred equally across all countries and territories (Corrales, 2017). Studies suggested that stigmas, prejudices, and stereotypes towards homosexuality in the region of Latin America are linked to popular beliefs of an underlying implication of immorality rooted in Christianity (Castillo Nuñez et al., 2019; Moral de la Rubia & Valle de la O, 2014).

Recently, the Supreme Court of Justice of Panama ruled against legalizing same-sex marriage in Panama. This ruling set a precedent in the country, as it failed to align with a call for the approval of the legalization of same-sex marriage in Panama by the Inter-American Commission on Human Rights (IACHR) (Inter-American Commission on Human Rights (IACHR), 2023).

Previous studies discuss that those older (Rollè et al., 2022), males (Jäckle & Wenzelburger, 2015; Kite et al., 2021; Lingiardi et al., 2005), with limited educational background (Dorsen, 2012; Lin et al., 2021), with certain religious affiliations and religious behaviors (Jäckle & Wenzelburger, 2015; Rollè et al., 2022), including Christianity, with certain political orientations (López-Sáez et al., 2020; Rollè et al., 2022), and with no homosexual friends or family members (Bowen & Bourgeois, 2001), are more likely to report increased negative attitudes toward lesbians and gay men. Extensive research has assessed attitudes toward LGBTQAI+ individuals among college students (Anderson & Maugeri, 2024; Worthen, 2012). This study includes predictors for homonegativity among college students highlighted in previous research, including degree programs (Papadaki et al., 2015) and gender (Kite et al., 2021; Konstantinidis et al., 2021).

Attitudes toward LGBTQAI+ individuals derive from multiple individual, family, community, policy, and geopolitical factors. Therefore, studies have focused on the individual-level effects of homonegativity (Bhugra et al., 2021; Flood et al., 2013) and the populational effects of increased homonegativity on the LGBTQAI+ community and the general public (Gates, 2013; Taylor, 2020). In a general sense, these attitudes also interact with other structural and historical factors, including sexism (Rollè et al., 2022), hetero-patriarchal social structures (Lin & Lee, 2024), acculturation (Ju, 2022), religiosity (Rollè et al., 2022), and multiple forms of structural racism, including modern racism (Campo-Arias et al., 2016).

Policies and legal protections can profoundly impact attitudes toward LGBTQAI+ individuals (Gates, 2013), even when its effects tend to concentrate among those who, before the policies, did not hold negative attitudes toward homosexuality (Redman, 2018). Indirectly, legislation and policies that restrict or limit the rights and safety of LGBTQAI+ individuals can also impact non-LGBTQAI+ individuals. These effects have been exemplified by studies evaluating the populational effects of anti-gay sentiment and attitudes (Hatzenbuehler et al., 2014).

Methods

Objective

Preliminary findings underscore the importance of surveilling attitudes towards homosexuality to understand the disenfranchisement of LGBTQAI+ in the region of the Americas and, in particular, Panama. Hence, studies that combine exploring the role of sociodemographic factors (gender and degree program) and structural factors (religiosity and modern racism) as potential covariates warrant further exploration due to its potential to justify future interventional efforts to prevent discrimination and promote well-being among LGBTQAI+ Panamanians. Therefore, this study aims to examine the correlates of the attitudes toward homosexuality among undergraduate students from the largest university in Panama.

Population and Sample

For this campus-based cross-sectional study, participant enrollment occurred at the University of Panama's Harmodio Arias Madrid Campus in Panama City from July to October 2017. Participants were recruited from the University of Panama's psychology, engineering, and fine arts schools. By the time the study was conducted, registration records showed that there was a total of 400, 188, and 125 undergraduate students enrolled in the schools of psychology, engineering, and fine arts, respectively, in the study source population. Figure 1 depicts the participant recruitment flow diagram.

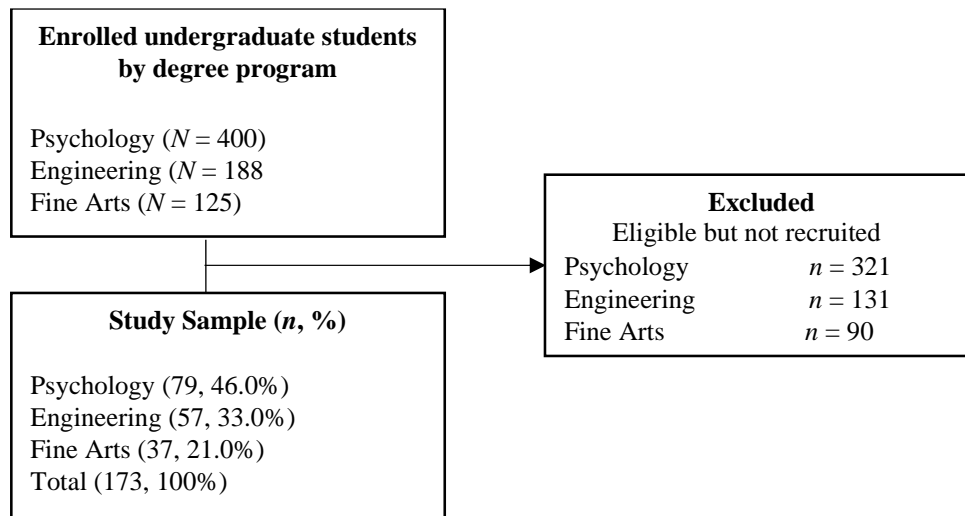


Figure 1. Participant recruitment flow diagram.

Undergraduate students 18 years or older who were enrolled in a degree program in psychology, engineering, and fine arts schools were eligible for this study. A convenience sample of hundred seventy-three students (N= 173) voluntarily agreed to participate. Participants included 79 undergraduate students from psychology (46.0%), 57 from engineering (33.0%), and 37 from fine arts (21.0%).

Out of the 173 participants, females comprised most participants (76.3%) with a mean age of 20.8 years (SD = 2.5). Thirty-one percent of the sample reported a family monthly income ranging from \$500 to \$1,000. Most participants were multiracial (52.6%), followed by Black (24.9%). Nearly 90.2% of participants self-identified as heterosexual or straight, while 1.2% self-identified as homosexual. The majority of students reported that they were Christian (87.9%) (Table 1).

Table 1. Sociodemographics of the Sample by Degree Program (N = 173)

	Undergraduate Degree Program			Total	F	X ²	P value ^a
	Psychology	Engineering	Fine Arts				
Gender N (%)						8.95	0.011*
Male	13 (16.5)	22 (38.6)	8 (21.6)	43 (24.9)			
Female	66 (83.5)	35 (61.4)	29 (78.4)	130 (75.1)			
Age (years) M (SD)	22.2 (±2.4)	18.9 (±1.1)	20.4 (±2.3)	20.8 (±2.5)	43.63		0.000*
Race						20.75	0.054
Black	18 (22.8)	14 (24.6)	11 (29.7)	43 (24.8)			
Indigenous peoples	3 (3.8)	6 (10.5)	6 (16.2)	15 (8.7)			
White	7 (8.9)	9 (15.8)	4 (10.8)	20 (11.6)			
Multiracial	50 (63.3)	25 (43.8)	16 (43.2)	91 (52.6)			
Missing	1 (1.3)	3 (5.3)	0 (0)	4 (2.3)			
Family monthly income N (%)						19.88	0.011*
<\$250	1 (1.3)	7 (12.3)	4 (10.8)	12 (6.9)			
\$250-500	8 (10.1)	5 (8.8)	5 (13.5)	18 (10.4)			
\$500-1,000	18 (22.8)	25 (43.9)	11 (29.7)	54 (31.2)			
\$1000-2000	26 (32.9)	11 (19.3)	12 (32.4)	49 (28.3)			
>\$2000	25 (31.6)	9 (15.8)	5 (13.5)	39 (22.5)			
Missing	1 (1.3)	0 (0)	0 (0)	1 (0.1)			
Sexual Orientation N (%)						11.21	0.024*
Heterosexual (or straight)	76 (96.2)	50 (87.7)	30 (81.1)	156 (90.2)			
Homosexual (lesbian or gay)	0 (0)	0 (0)	2 (5.4)	2 (1.2)			
Other	3 (3.8)	4 (7.0)	5 (13.5)	12 (6.9)			
Missing	0 (0)	3 (5.3)	0 (0)	3 (1.7)			
Religion N (%)						5.78	0.672
Christian	66 (83.5)	50 (87.7)	34 (91.9)	150 (86.7)			
Protestant	3 (3.8)	0 (0.0)	1 (2.7)	4 (2.3)			
Hindus	1 (1.3)	0 (0.0)	0 (0.0)	1 (0.6)			
Buddhists	1 (1.3)	0 (0.0)	0 (0.0)	1 (0.6)			
Other religion	8 (10.1)	7 (12.3)	2 (5.4)	17 (9.8)			
ATLG M (SD)							
Full Scale	73.9	93.2	78.8	81.3	8.32		0.000*
ATG	(±28.7)	(±23.2) ^b	(±30.1)	(±28.5)	10.23		0.000*
ATL	37.6	48.8	38.3	41.5	6.07		0.003*
	(±15.7)	(±13.5) ^b	(±15.7)	(±15.8)			
	36.2	44.7	40.5	39.9			
	(±14.3)	(±11.8) ^b	(±16.3)	(±14.4)			
Francis Scale of Attitude Towards Christianity M (SD)	16.9 (±5.4)	17.7 (±4.5)	18.5 (±2.8)	17.5 (±4.7)	1.51		0.224
Modern Racism Scale M (SD)	6.2 (±3.9) ^b	11.2 (±3.5)	10.7 (±4.3)	8.8 (±4.6)	31.29		0.000*
Total N (%)	79 (45.7)	57 (32.9)	37 (21.4)	173 (100)			

Instruments

Attitudes Toward Lesbians and Gay Men (ATLG)

Participants completed the adapted Spanish version of the Attitudes Toward Lesbians and Gay Men (ATLG) Scale (Moreno et al., 2015). The scale consists of a 20-item Likert-type self-report questionnaire that measures attitudes toward lesbians and gay men, including subscales measuring Attitudes Toward Lesbians (ATL) and Attitudes Toward Gay Men (ATG) (Moreno et al., 2015). Responses range from 1 to 9, with total scores ranging from 20 to 180, with values higher than 60 indicating the presence of negative attitudes (Moreno et al., 2015). The Spanish version has shown good reliability for the ATLG full scale ($\alpha = 0.87$) and its subscales of ATL ($\alpha = 0.74$) and ATG ($\alpha = 0.85$) (Moreno et al., 2015). Cronbach's alpha calculated for this study for the ATLG scale was 0.90, while for the subscales Attitude Toward Lesbians (ATL) and Attitude Toward Gay Men (ATG), we found 0.78 and 0.86, respectively.

Francis Scale of Attitude Towards Christianity

The five-item Spanish version of the Francis Scale of Attitude Towards Christianity (Francis-5), adapted by Campo-Arias et al. (2017) in Spanish, was utilized. The Francis-5 is a self-administered scale that assesses intrinsic or internally motivated religiosity based on personal religious practice. Responses range from 0 to 4, with possible summed scores from 0 to 20. Higher scores indicate greater intrinsic religiosity (Campo-Arias et al., 2017 & Campo-Arias & Ceballos-Ospino, 2020). Campo-Arias et al. (2017) reported a high-reliability coefficient for the Spanish version of the Francis-5 scale ($\alpha = 0.97$). The Francis Scale of Attitudes Toward Christianity Scale obtained a Cronbach's alpha score of 0.97 in our study.

Modern Racism Scale

Participants responded to the Spanish version of the Modern Racism Scale adapted by Campo-Arias et al. (2016). The responses range from 0 to 4. Final scores range from 0 to 20, with higher scores corresponding to greater sublimated or non-conventional racism, described as modern racism (Campo-Arias & Ceballos-Ospino, 2020). Campo-Arias et al. (2016) reported an acceptable reliability score for the Spanish version of the Modern Racism Scale ($\alpha = 0.67$). For the Modern Racism Scale, a 0.76 Cronbach's alpha score was found.

Data Collection Procedures and Data Analysis

The study met all ethical standards and obtained exemption status by an internal IRB at the College of Psychology, University of Panama. Each participating program at the University of Panama approved the research protocol before participants were enrolled. All participants voluntarily agreed to participate after an in-person and classroom-based discussion of the informed consent protocol. Participants received no incentives for participation, but in coordination with the University of Panama's health clinic, students were provided with a resource guide detailing available on-campus resources. The application process took about 15-20 minutes.

Results

Findings suggest a high level of homonegativity among Panamanian undergraduate students ($M = 81.3$, $SD = 28.5$). Overall, participants reported a high intrinsic religiosity ($M = 17.5$, $SD = 4.7$) and low sublimated racism ($M = 8.8$, $SD = 4.6$). Across groups, compared to psychology and fine arts, engineering students reported the highest levels of negative attitudes toward homosexuality ($M = 93.2$, $SD = 23.2$). Engineering students also reported greater intrinsic religiosity ($M = 18.5$, $SD = 2.8$), while fine arts students reported higher sublimated racism ($M = 11.2$, $SD = 3.5$) compared to all other degree programs.

An analysis of variance (ANOVA) was used to compare groups (Table 1). When evaluating the Attitudes Toward Lesbians and Gay Men Scale (ALTG), ANOVA revealed significant group differences, $F(2,169) = 8.32$; $p < .01$, with psychology ($M = 73.9$, $SD = 28.7$) and fine arts students ($M = 78.81$, $SD = 30.1$) reporting lower mean scores compared to engineering students ($M = 93.2$, $SD = 23.2$). Similarly, group differences were

significant for the Modern Racism Scale $F(2,166) = 31.29$; $p < .01$, with psychology students ($M = 6.24$, $SD = 3.9$) reporting less modern racism compared to fine arts ($M = 10.7$, $SD = 4.3$) and engineering students ($M = 11.2$, $SD = 3.5$). There were no significant differences for the Francis Scale of Attitude Towards Christianity $F(2,170) = 1.51$; $p = 0.22$.

A series of one-way analyses of covariance (ANCOVA), controlling for age and sex, revealed statistically significant differences between groups $F(2,161) = 4.40$, $p = .014$, which remained constant when assessing results for the ATLG subscales of Attitudes Towards Gay Men (ATG) $F(2,161) = 5.51$, $p = .005$ and Attitudes Towards Lesbians (ATL) $F(2,161) = 3.20$, $p = .043$. Results for the Modern Racism Scale suggest that the groups compared differ significantly $F(2,161) = 21.20$, $p < .001$. However, results suggest no significant differences between groups for intrinsic religiosity as measured by the Francis Scale of Attitude Towards Christianity $F(2,161) = 1.06$, $p = .348$. Most participants in the sample were female (75%). Gender also differed significantly by degree program $X^2 = 8.95$; $p = 0.011$. Gender was only significant for the ATG subscale $F(1,161) = 4.209$, $p = .042$, while for all other scales and subscales, it was not a significant covariate.

Finally, a Pearson chi-square test revealed that positive intrinsic religiosity (Francis-5) was correlated positively with negative attitudes toward lesbians and gay men (ATLG) $r(170) = 0.339$, $p < .01$. In contrast, no significant correlation was found for the Attitudes Toward Lesbians and Gay Men (ATLG) scale and the Modern Racism Scale (MRS) $r(166) = 0.134$, $p = 0.084$.

Discussion and Conclusions

Our findings confirm the presence of negative attitudes toward homosexuality across all studied groups (students in engineering, fine arts, and psychology), as has been reported in similar studies conducted in Mexico and Chile (Barrientos & Cárdenas, 2012; Moral de la Rubia & Valle, 2011). In contrast, European samples report more positive attitudes (Papadaki et al., 2015). Findings indicate high homonegativity among Panamanian undergraduate students and confirm the role of gender, degree program, and religiosity as correlates for those attitudes. Our study failed to confirm that modern racism is a correlate for homonegativity; however, this finding could be due to the lower self-reported modern racism in our sample compared to other regional studies (Campo-Arias et al., 2016).

Significant differences across undergraduate degree programs were found in the attitudes toward lesbians and gay males and non-conventional or sublimated racism. Conversely, no significant differences were found across groups regarding their intrinsic religiosity. Findings regarding religiosity could be linked to the high levels of Christianity in Panama (Pew Research Center, 2014).

In terms of the different study programs, engineering students reported higher negative attitudes toward homosexuality than those in psychology and fine arts. Engineering students also reported greater intrinsic religiosity than psychology or fine arts students, which may explain their negative attitudes toward lesbians and gay men. Additionally, several studies suggest that the curriculum and prevalence of men in specific science majors, including engineering, could impact the presence of students' negative attitudes (Hutchings, 2018; Jäckle & Wenzelburger, 2015; Moral de la Rubia & De la O, 2014). In agreement with previous research, undergraduate psychology students reported the lowest levels of negative attitudes toward lesbians and gay men (Papadaki et al., 2015). Yet, in case negative attitudes towards homosexuality persist among psychology major students, it can adversely impact the mental health services provision and quality (American Psychological Association, 2009), raising concerns about upholding professional values of harm reduction and patient autonomy as professionals in the field (Rees et al., 2021).

Interestingly, gender was only a significant covariate for the attitudes toward gay men, while it was not significant for the ATLG scale, including the ATL subscale, failing to confirm findings from previous studies (Kite et al., 2021; Konstantinidis et al., 2021). This finding could be because most participants in the study were female. However, it could also underscore the importance of future research to explore the role of gender identity and gender expression for the impact of gender on the attitudes toward LGBTIQ+ individuals.

Similar to other international and regional studies (Jäckle & Wenzelburger, 2015; Moreno et al., 2015), this

study reports that intrinsic religiosity is correlated significantly with attitudes toward lesbians and gay men. This relationship was also confirmed in similar studies using the Francis-5 scale with a sample of Peruvian medical students (Niño-Gutiérrez et al., 2019). This is the first study that has utilized the Brief Modern Racism Scale (MRS) to examine the correlation between homonegativity and modern racism. Nevertheless, previous studies conducted in the region using the full-scale version of MRS have shown that individuals with higher negative attitudes toward homosexuality frequently hold negative attitudes toward diverse ethnic and racial populations (Campo-Arias et al., 2014). In contrast, we found no significant correlation between modern racism and attitudes toward homosexuality.

This study has several limitations. First, we included a convenience sample of undergraduate students; therefore, the findings are not generalizable to the broader population of undergraduate students at the University of Panama. However, the University of Panama is the country's oldest and largest higher education institution (HEI), with over 73,000 students enrolled, and offers the most diversity regarding study areas (Svenson & De Gracia, 2020). Secondly, most participants enrolled in our study were women (76%); however, this is comparable to the percentage of women undergraduate enrollees (60%) at the University of Panama during the last decade (Rodríguez Blanco et al., 2020). Thirdly, this was a cross-sectional study and did not include changes in attitudes over time, limiting the external validity of the findings. Fourth, the study did not incorporate cultural predictors for homonegativity, such as traditional gender roles -commonly discussed in Latin America as machismo and marianismo- (Hirai et al., 2018; Nierman et al., 2007), cultural background (Berg et al., 2017), public discourse on sexual minorities and their rights (Gyasi-Gyamerah et al., 2019), and sexual knowledge (Hong et al., 2022). Strengths of this study include a high response rate to the measures and the surveys, being the first study to record negative attitudes toward lesbians and gay men in a Panamanian sample, and the first study of its kind in Central America, which may motivate future research in this area.

Moreover, understanding the magnitude of negative attitudes toward homosexuality and how they change over time is fundamental to the non-binary perspective of human sexuality. Historically, in sexual orientation research, there has been a bias at mainly including white, adult, middle-class men as representative of the LGBTQI+ community as a whole, underrepresenting other populations (Hartwell et al., 2017).

An interesting area of study related to this research is the impact of self-reported sexual orientation or having gay and lesbian acquaintances upon attitudes toward homosexuality. Previous research suggests that those who self-identify or have contact with sexually diverse individuals report more tolerant attitudes (Dellaposta, 2018; Gulevich et al., 2021). Future research should confirm this finding in Panama.

Conducting studies that can help identify attitudes toward homosexuality in an evidence-based and culturally competent way is a current imperative for Latin America, especially now that several countries are debating the legalization of same-sex marriage (González, 2020). In addition to the inclusion of other variables, future research should focus on verifying the reliability of each scale in different contexts, including non-academic contexts, and adding a life course perspective to understand how attitudes toward homosexuality change over time.

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Conflict of Interest Disclosure

The authors report that there are no conflicts of interest.

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