The Relationship Between Bias-Related Victimization and Generalized Anxiety Disorder Among American Indian and Alaska Native Lesbian, Gay, Bisexual, Transgender, Two-Spirit Community Members

Abstract

Lesbian, gay, bisexual, transgender, two-spirit, and American Indian and Alaska Native community members share long histories of discrimination and poorer health status as compared to mainstream Americans. In particular, these groups experience bias-related victimization, a type of discrimination based on inherent traits such as race or ethnicity and sexual orientation. This cross-sectional study ($N = 334$) used a revised bias-related victimization measure and examined the relationship between self-reported bias-related victimization and generalized anxiety disorder, depression, and substance abuse among lesbian, gay, bisexual, transgender, and two-spirit American Indians and Alaska Natives. The results showed that 84.4% reported experiencing bias-related victimization. Those with the highest levels of bias-related victimization had 2.79 times ($p = .009$; 95% CI [1.30, 6.02]) the risk of reporting symptoms of generalized anxiety disorder as compared to those with no bias-related victimization, controlling for income, education, sex, age, sexual orientation, and chronic disease. There was no significant relationship between bias-related victimization and major depression or substance dependence/abuse. Our results support a potential relationship between bias-related victimization and generalized anxiety disorder for lesbian, gay, bisexual, transgender, and two-spirit American Indians and Alaska Natives. Including diverse populations in research is essential to a better understanding of the impact on health outcomes. Inclusion of bias-related victimization questions in clinical treatment may help identify at-risk patients.

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Introduction

Anxiety disorders are the most common type of mental illness in the United States, with 40 million (18.1%) of the adult U.S. population (age 18 and older) affected (McLean, Asnaani, Litz, & Hofmann, 2011). Anxiety disorders cost the United States more than $42 billion a year in 1990—almost one third of the $148 billion total mental health bill (Hoffman, Dukes, & Wittchen, 2008). Women are twice as likely as men to experience generalized anxiety disorder (McLean et al., 2011). The American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (5th ed., 2013) defines generalized anxiety disorder as including excessive anxiety and worry about several events or activities most days of the week for at least six months; difficulty controlling feelings of worry; at least three symptoms out of a list comprising restlessness, fatigue, trouble concentrating, irritability, muscle tension, and sleep problems; anxiety or worry that causes significant distress or interferes with daily life; and anxiety that isn't related to another mental health condition, such as panic attacks or post-traumatic stress disorder (PTSD), or to substance abuse or a medical condition (American Psychiatric Association, 2013).

Many individuals with anxiety disorders experience comorbid conditions, including depression, bipolar disorder, and other mental and physical illnesses (McLean et al., 2011). The cross-sectional analysis presented in this paper provides a first look at anxiety disorders in a "minority within a minority": lesbian, gay, bisexual, transgender, and two-spirit (LGBTT-S) people in American Indian and Alaska Native (AI/AN) urban communities. *American Indian* and *Alaska Native* are terms adopted by the United States, used in law and policy to refer to the 566 federally recognized tribal populations across the United States. Many AI/ANs prefer to identify by tribal affiliation. *Two-spirit* is a contemporary pan-Indian umbrella term for AI/AN LGBTQ, adopted by some in the 1980s, and with which some AI/AN tribes identify but others view with negative connotations. Other individual two-spirit AI/ANs adopt the term as a way to recognize the confluence of culture and sexual orientation. While these identity characteristics can vary by individual and by tribe, it may be possible to measure the ways in which dominant mainstream society views and treats these racial, gender identity, and sexual orientation minorities. Because each social location, specifically sexual orientation/gender identity and racial/ethnic identity, is acknowledged to experience more discrimination and violence than their heterosexual counterparts and non-AI/AN counterparts, the combination of the two, the *intersectionality* of identities, presents an important case for better understanding the relationship between bias-related victimization (BRV), a set of discrimination practices experienced by members of minority communities, and mental health outcomes.

Historical Context

Among LGBTT-S populations, discrimination has long been reported as higher than for non-LGBT individuals. AI/ANs also experience higher levels of discrimination than white Americans, and American Indians are more than twice as likely to be victim of a violent crime as other races (Perry, 2004). These present-day experiences of discrimination have their roots in historical practices as well as laws and policies deliberately targeting AI/AN and LGBTT-S community members. With the advent of colonization, AI/ANs were first seen as barbaric, and during the Darwinian era of the late 1800s, Darwin and others applied the theory of natural selection to humans, categorizing AI/ANs as subhuman (Pessah, 2014; "Who Are," 1889). The United States' Manifest Destiny doctrine, the belief that the country was justified in expanding its territory to the Pacific Ocean, led to policies in the 1800s that were catastrophic for AI/ANs, with entire tribes decimated through exposure to disease or through armed conflict, and tribal ways of life so curtailed that tribal knowledge and cultures were damaged irreparably. The reservation era of the late 19th and early 20th centuries, during which the United States relegated AI/ANs to tightly controlled and limited parcels of diminishing areas of land, and the process of land acquisition to create the western United States' territories brought with it policies intended to extinguish tribal cultures. Laws and policies allowed sale or seizure of millions of acres of tribal lands to the U.S. government or to non-Indians (Harmon, 2003; Miller, 2010), banned spiritual practices, required that AI/AN families turn their children over to strangers to be sent away to boarding schools hundreds of miles from home, prohibited traditional livelihoods, and introduced western European dietary staples.

In the early 1900s AI/ANs saw few improvements in their conditions, with extreme poverty, poor or nonexistent healthcare despite treaty guarantees, and ways of life gone or dwindling as a result of the previous century of abuse and disenfranchisement (Treglia, 2013). While AI/ANs were recognized as U.S. citizens in 1924, many tribal members lived within islands of poverty, with Jim Crow–style policies—such as banning AI/ANs from non-Indian places of business, requiring AI/ANs to use different bathrooms and drinking fountains, and refusing to provide local government services to tribal communities—continuing well into the 1960s and 1970s (Steinman, 2012). Indeed, tribal members in Arizona, Maine, New Mexico, and Utah were not allowed to vote until 1948, 1954, 1957, and 1962, respectively. Alongside these discriminatory practices and through the 1980s, tribal assertion of guaranteed treaty rights such as hunting, gathering, and fishing led to additional confrontation with local non-Indian communities who still believed Indian reservations should be eliminated and the lands made available to the general public (Steinman, 2012).

Prior to European contact, many tribes viewed tribal members who identified as LGBTT-S as having an important status, with perhaps skills and medicine to help others (Sheppard & Mayo, 2013). This is in contrast with the long history of discrimination non-Indian LGBTT-S community members faced. For hundreds of years, strict interpretation of many religious texts has barred and devalued same-sex relationships (Hurewitz, 2004; Wilkinson & Pearson, 2009). In 1930s Germany, LGBTT-S community members were singled out alongside Jews and

Gypsies as targeted groups for hatred, and forms of abuse based on sexual orientation included "re-education," castration, and imprisonment (Heineman, 2002).

Only in 2003 did the U.S. Supreme Court reverse a previous court decision upholding state same-sex sodomy laws, which had previously made engaging in same-sex intercourse a felony in 14 states (Rosenbaum & Burke, 2003). In 2015 the U.S. Supreme Court ruled that states must license and uphold same-sex marriages, guaranteeing same-sex couples the same rights as heterosexual couples.

In 2009 the U.S. Congress passed the Matthew Shepard and James Byrd, Jr. Hate Crimes Prevention Act, expanding the 1969 federal hate crime law to include crimes motivated by the victim's actual or perceived gender, sexual orientation, gender identity, or disability and ensuring federal law enforcement has greater authority and funding to investigate possible hate crimes that local law enforcement fails to pursue. This law also ensures that the Federal Bureau of Investigation tracks hate crimes based on gender and gender identity. However, what is the impact of discriminatory practices that do not rise to the level of a hate crime? How do members of multiple minority communities understand the discrimination they experience, and what health impact does this have?

Even with these 21st-century rulings, LGBTT-S community members continue to receive discriminatory treatment at multiple levels across society (Landers, 2015). Ongoing hatred and mistreatment of AI/ANs means that these citizens are more likely to be victims of violent crime from white Americans, African Americans, and other races than from members of their own group (Perry, 2004). The combined historical and present-day conditions have led to extreme poverty and ongoing discrimination for AI/ANs, fostering conditions such as generalized anxiety, as well as other behavioral and social problems.

Research Context

Trauma and interpersonal violence are associated with higher levels of anxiety and depression in AI/AN individuals compared to non-AI/AN individuals (Evans-Campbell, 2008; Evans-Campbell, Lindhorst, Huang, & Walters, 2006). Of respondents in the American Indian Service Utilization, Psychiatric Epidemiology, Risk and Protective Factors Project (AI-SUPERPFP), 17.4% reported some type of anxiety disorder in their lifetime (Beals et al., 2005). One study found that AI/AN LGBTT-S respondents had higher rates of depression and anxiety than their heterosexual counterparts (Balsam, Huang, Fieland, Simoni, & Walters, 2004).

In a study of perceived discrimination among lesbian, gay, and bisexual adults, Mays and Cochran (2001) reported a discrimination experience rate of 76% as compared to 65% in heterosexuals. Discrimination was positively associated with a diagnosis of any psychiatric disorder ($OR = 1.6$; Mays & Cochran, 2001). Heidt, Marx, and Gold (2005) found that 63% of lesbian, gay, and bisexual men and women had experienced some form of sexual violence and that sexual violence was associated with an increased risk of depression and PTSD. Herek, Gillis, and Cogan (1999) and Hershberger and D'Augelli (1995) also confirmed that gay-related harassment and physical abuse was associated with depression, anxiety, and other mental health

problems. While Morris and Balsam (2003) found that AI/AN respondents experienced higher levels of victimization than other races, and Williams, Mohammed, Leavell, and Collins (2010) have summarized the evidence of a differential in the prevalence of mental health issues across racial groups, more research within the AI/AN LGBTT-S community is needed to understand the unique risk factors these community members face.

More studies have begun to focus on AI/AN LGBTT-S, demonstrating that individuals within this group experience significantly higher risk for suicidality, alcohol problems, and drug use if they have boarding school experience (Evans-Campbell, Walters, Pearson, & Campbell, 2012); are more likely to use tobacco at higher rates and report lower self-rated health if they experience more pain (Chae & Walters, 2009); and report higher rates of childhood physical abuse, more familial historical trauma, higher levels of depression, more drug and alcohol use, and more mental health service use than heterosexual AI/ANs (Balsam et al., 2004). The present study is based on secondary data from the Honor Project, one of the first research studies to address the lack of focus on discrimination and mental health within AI/AN LGBTT-S communities (see Methods).

The theory of intersectionality recognizes that different forms of discrimination compound and exacerbate each other across historically disenfranchised groups, such that their experience is that of the "multiple minority" (Balsam et al., 2004). The presence of multiple causal factors makes it difficult to disambiguate and separate the causal factors of generalized anxiety in AI/AN LGBTT-S populations. Intersectionality theory posits that the experiences of AI/AN LGBTT-S will be qualitatively different from those of the general LGBT population, and just as qualitatively different from the experiences of the general AI/AN population. Thus, public health studies based on LGBT populations alone or AI/AN populations alone and applied to AI/AN LGBTT-S groups will only partially address the multiple factors at play. By contrast, more holistic studies that take into consideration the intersectionality of the AI/AN LGBTT-S population could provide a much more complete description of what is being observed.

We hypothesized that experience with BRV is associated with report of mental health problems. Determining whether an association between BRV and major depression, generalized anxiety disorder, or substance dependence/abuse exists could help to improve health status for an at-risk minority group through increased access to care, enhanced health assessments, and more comprehensive care, as well as provide public health support for implementation of meaningful anti-discrimination laws and policies. For example, the CDC (Centers for Disease Control and Prevention) provides a racial discrimination optional module in the Behavioral Risk Factor Surveillance Survey, but few states implement this module (Blosnich & Bossarte, 2009).

This study tests one assessment of bias-related victimization with self-reported mental health and substance dependence/abuse outcomes to begin understanding how to measure the effect of bias-related victimization, and how to identify the risks associated with exposure to BRV for those who are members of two groups subject to historic and present-day violence and discrimination. Our specific aims are to (a) describe the prevalence of BRV, mental health, and

substance abuse problems in AI/ANs identifying as LGBTT-S; and (b) examine the association of BRV with mental health and substance abuse problems, controlling for covariates.

Methods

This study focuses on a secondary data analysis from the Honor Project, a study of LGBTT-S American Indians and Alaska Natives. The Honor Project sampling methods have been described elsewhere (Chae & Walters, 2009). In brief, 447 AI/AN respondents were recruited through targeted, partial-network, and respondent-driven sampling techniques from seven urban areas: Seattle-Tacoma, San Francisco-Oakland, Los Angeles, Denver, Tulsa, Minneapolis-St. Paul, and New York City. To be eligible, respondents were required to (a) be enrolled in a tribe or report a minimum of 25% American Indian blood; (b) self-identify as lesbian, gay, bisexual, two-spirit, or engaging in same-sex sexual behaviors in the past 12 months; (c) be 18 years or older; (d) speak English; and (e) reside, work, or socialize in the area of the study sites. Written informed consent was obtained from all subjects upon determining study eligibility. The project achieved an 80.1% response rate across the three recruiting methods, and 451 respondents were interviewed between July 2005 and March 2007. Four respondents did not meet eligibility criteria and were excluded. Respondents received $65 for completing a 3- to 4-hour computer-assisted interview. Respondents also received $10 for each referral to the study.

The Honor Project obtained institutional review board approval from the University of Washington. The secondary data analysis conducted in this study also obtained University of Washington institutional review board approval and, subsequently, a determination of exemption from review.

Our conceptual model is based on the theory that personal characteristics (race, sex identity, sexual orientation) engender external responses that may negatively affect an individual's mental and/or physical health. Bias-related victimization (BRV) attempts to measure the "exposure" of these deleterious environmental responses and is the independent variable in this analysis. Assessments for major depression, generalized anxiety disorder, and substance abuse are the dependent variables.

Bias-Related Victimization

The Honor Project survey included nine questions assessing BRV derived from previous studies on LGBT populations and hate crimes (Herek et al., 1999; Hershberger & D'Augelli, 1995). The questions were as follows:

Have you ever in your life experienced any of the following:
(1) You were threatened with physical violence;
(2) You were verbally harassed or verbally attacked;
(3) You were chased, followed, or stalked;
(4) Your property was purposely damaged or vandalized;

(5) Your property was stolen, as in a break-in, burglary, or theft;

(6) You were robbed, as in a hold-up or mugging;

(7) You were punched, kicked, hit, or beaten;

(8) You were assaulted with a weapon;

(9) You were raped or sexually assaulted.

We ranked the nine bias-related victimization questions into low to moderate BRV (Questions 1–6) and severe BRV (Questions 7–9) using a scheme borrowed from the Conflict Tactics Scale, an assessment used in partner and family violence (Morse, 1995). We then created a categorical variable that included three categories: *no BRV* (coded 0), *low to moderate BRV* (coded 1), and *severe BRV* (coded 2). Due to a faulty skip pattern in some of the computers used, 111 respondents were never asked the BRV questions, and two respondents skipped the question on rape/sexual assault, resulting in a final sample size of $N = 334$.

Dependent Variables

We were interested in associations between BRV and major depression, generalized anxiety, and substance dependence/abuse. Major depression was assessed through the Center for Epidemiologic Studies Depression scale (CES-D; Roberts, 1980). Generalized anxiety and alcohol/drug dependence and abuse were assessed through the Mini-International Neuropsychiatric Interview (M.I.N.I.) 5.0.0/English Version/*DSM-IV* 11/1/03 (Sheehan et al., 1998).

Demographic Characteristics

Sex, age, sexual orientation/gender identity, education, monthly household income, and number of chronic diseases (i.e., diabetes, hypertension, cancer, arthritis) were used as covariates.

Missing Data

Missing data were limited to three responses on age and three on income. Multiple imputation was used to impute these six values.

Analyses

Descriptive statistics were analyzed based on BRV status. Bivariate statistical tests were performed to determine whether personal characteristics were significantly different across the nine BRV groups. Three regression models were explored. First, logistic regression was used to examine an association between major depression and BRV, controlling for covariates. Major depression was dichotomized into *yes* (coded as 1) and *no* (coded as 0). Next, logistic regression was employed to examine an association between generalized anxiety disorder and BRV, controlling for covariates. Generalized anxiety disorder was dichotomized into *yes* (coded as 1) and *no* (coded as 0). Finally, we used logistic regression to examine the association between substance dependence/abuse and BRV groups, controlling for covariates. Substance

dependence/abuse included both alcohol and drugs and was dichotomized into *yes* (coded as 1) and *no* (coded as 0). We analyzed data with Stata/SE Version 11.0 (StataCorp LP, College Station, TX).

Results

Demographic Characteristics

The average age was 37 for no-BRV respondents and 40 for BRV respondents (Table 1), with a trend of younger respondents among those with no-BRV ($p = .05$). Of the no-BRV respondents, 69% were men and 31% were women. In comparison, of BRV respondents, 57% were men and 43% were women. Of the no-BRV respondents 50% reported lesbian or gay sexual orientation status compared with 55% of BRV respondents. Of the no-BRV respondents, 29% reported bisexual status compared with 22% of BRV respondents, 14% reported two-spirit status compared with 19% of BRV respondents, and 8% reported other sexual orientation/gender identity status compared with 4% of BRV respondents.

Respondents indicated low levels of education; approximately 75% had not attained a college degree. Those reporting no-BRV also reported significantly lower education levels ($p = .01$). Almost half (48%) of respondents reported a household income of equal to or less than $12,000 per year. About 70% of respondents indicated they have a stable housing status, with approximately 25% having an unstable status and about 6% transient. Just under one quarter (23%) of no-BRV respondents reported having at least one of the four most common chronic diseases in the study (i.e., arthritis, cancer, diabetes, or hypertension), compared to 41% of BRV respondents ($p = .01$).

Independent Variable

Bias-related victimization. Most respondents (84.4% of 334) reported experiencing some form of bias-related victimization. The frequencies of different types of abuse were as follows:

• The most common was verbal harassment or verbal attack, reported by 72% of the respondents.
• 60% of respondents reported being threatened with physical violence.
• 55% reported being punched, kicked, hit, or beaten.
• 49% indicated they had been raped or sexually assaulted.
• 48% reported they had been chased, followed, or stalked.
• 47% reported having property stolen as through a break-in, burglary, or theft.
• 40% indicated that their property had been purposely damaged or vandalized.
• 34% had been assaulted with a weapon.
• 30% had been robbed, as in a hold-up or mugging.

Table 1

Demographic Characteristics of American Indian and Alaska Native Honor Project Respondents (**N** *= 334) Without and With Bias-Related Victimization (BRV)*

Factor	No BRV No. (*n* = 52)	%	BRV No. (*n* = 282)	%	*p*
Sex					
Men	36	69.2	162	57.4	.11
Women	16	30.8	120	42.6	
Age, mean (*SD*)	36.9 (10.1)		40.2 (11.1)		.05
Age groups					
18–29	14	26.9	56	19.9	.22
30–39	17	32.7	78	27.7	
40–49	16	30.8	89	31.6	
50+	5	9.6	59	20.9	
Sexual orientation / gender identity					
Lesbian/gay	26	50.0	156	55.3	.30
Bisexual	15	28.8	62	22.0	
Two-spirit	7	13.5	54	19.1	
Other	4	7.7	10	3.5	
Education					
Less than high school	10	19.2	33	11.7	.01
High school	21	40.4	67	23.8	
Some college	14	26.9	105	37.2	
Bachelor's degree or higher	7	13.5	77	27.3	
Household income per month					
0–$1,000	27	51.9	133	47.2	.29
$1,001–$2,000	13	25.0	54	19.1	
$2,001+	12	23.1	95	33.7	
Chronic disease[a]					
No	40	76.9	166	58.9	.01
Yes	12	23.1	116	41.1	

[a] Chronic disease is a composite of any diabetes, arthritis, hypertension, or cancer.

Dependent Variables

Mental health. The mean CESD total score for no-BRV respondents was 12.4 (*SD* = 5.4) as compared with 13.4 (*SD* = 5.8) for BRV respondents. Just under one quarter (23%) of no-

BRV respondents were classified as having major depression compared with 36% of BRV respondents; this difference was not statistically significant (Table 2). On the whole, those reporting any BRV experience had significantly higher levels of generalized anxiety disorder; 43% of BRV respondents were classified as having generalized anxiety disorder compared with 23% of no-BRV respondents, a statistically significant difference. The mean M.I.N.I. generalized anxiety score for no-BRV respondents was 0.3 ($SD = 0.4$) as compared with 0.5 ($SD = 0.4$) for BRV respondents. Total PTSD classification was low ($n = 20$), but only one person in the no-BRV group was classified as having PTSD as compared to 19 in the BRV group.

Substance dependence and abuse. Substance dependence and abuse did not significantly differ in the no-BRV group (48%) compared to the BRV group (51%; Table 2).

Table 2

Mental Health Characteristics of American Indian and Alaska Native Honor Project Respondents (N = 334) Without and With Bias-Related Victimization (BRV)

	No BRV		BRV		
Mental health problem	**No. (*n* = 52)**	**%**	**No. (*n* = 282)**	**%**	***p***
Major depression status					
Not depressed	40	76.9	182	64.5	.08
Major depression	12	23.1	100	35.5	
Generalized anxiety disorder					
No	40	76.9	161	57.1	.01
Yes	12	23.1	121	42.9	
Any substance dependence/abuse					
No	27	51.9	137	48.8	.68
Yes	25	48.1	144	51.2	

Logistic Regression Results

Any mental health outcome and substance dependence and abuse and BRV. Table 3 provides the results of the unadjusted and adjusted logistic regression results predicting any mental health or substance issue from BRV status. Those experiencing severe BRV had twice the risk ($p = .04$) of exhibiting some mental health or substance dependence or abuse than those with no BRV, controlling for income, education, sex, age, sexual orientation/gender identity, and chronic disease. Two of these were statistically significant in the model: income and age. For every one unit increase in income, the odds of reporting mental health or substance abuse problems increased by 0.64 ($p = .001$). For every 1-year increase in age, the odds of reporting any mental health or substance abuse problem increased by 0.74 ($p = .04$).

Table 3

Unadjusted and Adjusted Odds Ratio (PR) From Logistic Regression Analyses Predicting Any Mental Health Issue or Substance Abuse Status from Bias-Related Victimization

	Any mental health issue or substance abuse (N = 334)	
Factor	**Unadjusted *PR*** [95% CI], *p*	**Adjusted *PR*** [95% CI], *p*
Bias-related victimization		
None	1	1
Low to moderate [a]	1.09 [0.48, 2.46], .84	1.67 [0.65, 4.31], .29
Severe [b]	1.53 [0.81, 2.92], .19	2.09 [1.03, 4.25], .04
Income		0.64 [0.50, 0.83], .001
Education		
Less than high school		1
High school diploma		1.62 [0.58, 4.47], .36
Some college		0.76 [0.29, 1.97], .57
College or more		0.51 [0.18, 1.41], .20
Sex		0.89 [0.50, 1.56], .68
Age		0.74 [0.55, 0.98], .04
Sexual orientation / gender identity		
Lesbian/gay		1
Bisexual		1.17 [0.57, 2.40], .67
Two-spirit		1.53 [0.74, 3.16], .26
Other		0.95 [0.27, 3.38], .94
Chronic disease		1.53 [0.83, 2.82], .17

[a] Low to moderate bias-related victimization includes: being threatened with physical violence; being verbally harassed or verbally attacked; being chased, followed, or stalked; having property purposely damaged or vandalized; having property stolen, as in a break-in, burglary or theft; being robbed, as in a holdup or mugging.
[b] Severe bias-related victimization includes: being punched, hit, kicked, or beaten; being assaulted with a weapon; being raped or sexually assaulted.

Depression and BRV. Table 4 provides the results of the logistic regressions predicting major depression from BRV status. The variables that were considered for the model were sex, age, sexual orientation/gender identity, education, household income per month, and some chronic disease. Three of these were statistically significant in the adjusted model: income, education, and presence of chronic disease. The logistic results are very similar between the unadjusted and adjusted models—there is no significant difference in the odds of a participant having depression across levels of BRV. We further found that higher income and education status were associated with an increase in odds of depression. For those who received a college education or higher, the odds of reporting symptoms of major depression increased by 0.31

compared to those with less than a high school education ($p = .03$). Presence of a chronic disease (i.e., arthritis, cancer, diabetes, or hypertension) was associated with an increase in the odds that a person could be classified as having depression by a factor of 1.77 ($p = .029$).

Table 4

Unadjusted and Adjusted Prevalence Ratio (PR) From Logistic Regression Analyses Predicting Major Depression Status From Bias-Related Victimization

Factor	Major depression (*N* = 334)	
	Unadjusted *PR* [95% CI], *p*	**Adjusted *PR*** [95% CI], *p*
Bias-related victimization		
None	1	1
Low to moderate [a]	0.66 [0.30, 1.47], .31	0.78 [0.33, 1.81], .56
Severe [b]	1.13 [0.61, 2.07], .70	1.09 [0.57, 2.11], .79
Income		0.73 [0.56, 0.96], .02
Education		
Less than high school		1
High school diploma		0.57 [0.26, 1.23], .15
Some college		0.48 [0.23, 1.04], .06
College or more		0.31 [0.13, 0.77], .03
Sex		1.29 [0.79, 2.11], .31
Age		1.23 [0.95, 1.59], .11
Sexual orientation / gender identity		
Lesbian/gay		1
Bisexual		0.92 [0.51, 1.66], .78
Two-spirit		1.09 [0.56, 2.10], .80
Other		2.05 [0.68, 6.16], .20
Chronic disease		1.77 [1.06, 2.96], .03

[a] Low to moderate bias-related victimization includes: being threatened with physical violence; being verbally harassed or verbally attacked; being chased, followed, or stalked; having property purposely damaged or vandalized; having property stolen, as in a break-in, burglary or theft; being robbed, as in a holdup or mugging.
[b] Severe bias-related victimization includes: being punched, hit, kicked, or beaten; being assaulted with a weapon; being raped or sexually assaulted.

Generalized anxiety and BRV. Table 5 provides the results of the logistic regressions predicting generalized anxiety from BRV status. We found a significant association between generalized anxiety disorder status and BRV in both the unadjusted and adjusted models. In the unadjusted model, for those with severe BRV exposure the odds of exhibiting generalized anxiety disorder symptoms were 2.6 times ($p = .007$) the odds for those with no BRV, compared

with 2.79 times ($p = .009$) in the adjusted model. For those reporting low to moderate BRV in the adjusted model, the odds of reporting symptoms of generalized anxiety increased by 2.56 as compared to those without BRV exposure ($p = .05$). For those identifying as bisexual or two-spirit, the odds of reporting symptoms of generalized anxiety increased by 1.87 ($p = .05$) and 2.09 ($p = .03$), respectively, as compared to those who identified as lesbian or gay.

Table 5

Unadjusted and Adjusted Prevalence Ratio (PR) From Logistic Regression Analyses Predicting Generalized Anxiety Status From Bias-Related Victimization

Factor	Generalized anxiety ($N = 334$)	
	Unadjusted PR [95% CI], *p*	**Adjusted PR** [95% CI], *p*
Bias-related victimization		
None	1	1
Low to moderate [a]	2.08 [0.89, 4.90], .09	2.56 [0.99, 6.65], .05
Severe [b]	2.61 [1.30, 6.02], .01	2.79 [1.30, 6.02], .01
Income		0.66 [0.51, 0.86], .002
Education		
Less than high school		1
High school diploma		1.84 [0.81, 4.18], .14
Some college		1.15 [0.52, 2.55], .74
College or more		1.95 [0.79, 4.81], .15
Sex		1.33 [0.80, 2.18], .27
Age		0.95 [0.73, 1.22], .68
Sexual orientation / gender identity		
Lesbian/gay		1
Bisexual		1.87 [1.01, 3.45], .05
Two-spirit		2.09 [1.09, 4.01], .03
Other		3.12 [0.94, 10.37], .06
Chronic disease		1.45 [0.86, 2.45], .16

[a] Low to moderate bias-related victimization includes: being threatened with physical violence; being verbally harassed or verbally attacked; being chased, followed, or stalked; having property purposely damaged or vandalized; having property stolen, as in a break-in, burglary or theft; being robbed, as in a holdup or mugging.
[b] Severe bias-related victimization includes: being punched, hit, kicked, or beaten; being assaulted with a weapon; being raped or sexually assaulted.

Any substance abuse or dependence and BRV. Table 6 provides the results of the logistic regressions predicting any substance abuse or dependence from BRV status. We did not find a significant association between any substance abuse or dependence and BRV in either the

unadjusted or adjusted models. However, we did see a significant increase in the odds of reporting substance abuse or dependence of 0.75 ($p = .02$) for every one unit increase in income; of 0.39 ($p = .05$) for those completing a college education or higher as compared to those with less than a high school education; of 0.54 ($p = .02$) for women compared to men, and of 0.74 ($p = .02$) for every one unit increase in age.

Table 6

Unadjusted and Adjusted Prevalence Ratio (PR) From Logistic Regression Analyses Predicting Substance Abuse or Dependence Status From Bias-Related Victimization

Factor	Any substance use or dependence (*n* = 334)	
	Unadjusted *PR* [95% CI], *p*	**Adjusted *PR*** [95% CI], *p*
Bias-related victimization		
None	1	1
Low-moderate [a]	1.26 [0.58, 2.72], .56	1.96 [0.79, 4.84], .15
Severe [b]	1.12 [0.62, 2.04], .72	1.81 [0.90, 3.64], .09
Income		0.75 [0.58, 0.96], .02
Education		
Less than high school		1
High school diploma		1.42 [0.61, 3.34], .42
Some college		0.44 [0.19, 1.02], .06
College or more		0.39 [0.16, 0.98], .05
Sex		0.54 [0.32, 0.90], .02
Age		0.74 [0.57, 0.95], .02
Sexual orientation / gender identity		
Lesbian/gay		1
Bisexual		0.91 [0.47, 1.75], .78
Two-spirit		0.84 [0.44, 1.61], .60
Other		0.54 [0.17, 1.65], .28
Chronic disease		1.03 [0.61, 1.74], .93

[a] Low to moderate bias-related victimization includes: being threatened with physical violence; being verbally harassed or verbally attacked; being chased, followed, or stalked; having property purposely damaged or vandalized; having property stolen, as in a break-in, burglary or theft; being robbed, as in a holdup or mugging.

[b] Severe bias-related victimization includes: being punched, hit, kicked, or beaten; being assaulted with a weapon; being raped or sexually assaulted.

Discussion

The Honor Project study is the first effort to comprehensively examine health and wellness within AI/AN LGBTT-S communities. This paper brings into focus a population segment that experiences discrimination based on race and sexual orientation/gender identity, occurring simultaneously due to the population's inherent personal characteristics (Perry, Harp, & Oser, 2013). This sample suffers higher levels of depression, generalized anxiety, and violence than the broader U.S. population. These findings confirm previous research on AI/AN and LGBTT-S communities (Balsam et al., 2004; Beals et al., 2005; Simoni, Walters, Balsam, & Meyers, 2006) and demonstrate the relationship of a violence construct—severity—on mental health and substance abuse outcomes. In this study the most severe exposure to bias-related victimization is associated with higher odds of generalized anxiety disorder in AI/AN LGBTT-S respondents. We also saw that for those reporting severe BRV, the odds of reporting any depression, generalized anxiety, or substance dependence/abuse outcomes were significantly higher than for those reporting no BRV.

Interestingly, above and beyond the additional risk presented by BRV exposure, the odds of reporting symptoms of major depression, generalized anxiety, or substance dependence/abuse problems was also significantly higher for those with higher incomes, and for some outcomes (i.e., major depression and substance abuse) the odds were higher for those who completed college or higher levels of education. These findings confirm recent studies demonstrating higher risk for minority groups with higher income and education levels (Garnett et al., 2014; Seng, Lopez, Sperlich, Hamama, & Meldrum, 2012), suggesting that perhaps the additional stressors associated with these achievements may be greater for sexual, racial, and ethnic minorities, or perhaps these groups tend to identify the disparities in discrimination to which they are subject more readily. We further saw increased odds of reporting generalized anxiety symptoms among those identifying as bisexual or two-spirit, suggesting that people who identify in these ways experience greater risks. In addition, the odds of reporting substance dependence/abuse symptoms were higher for women as compared to men. This study reinforces the importance of investigating factors associated with mental health outcomes for these at-risk communities, paying particular attention to intersectionality theory in establishing the scope of the research.

The existing literature points toward two other important constructs that could provide additional insight into the victimization experienced in these communities: frequency of victimization (Poteat, et al., 2012) and the respondent's perception of why he or she was the target of these types of violence (Doyle & Molex, 2014). Frequencies of exposure to the nine types of victimization could provide important additional information on the effect of victimization on AI/AN LGBTT-S health outcomes. For example, one hypothesis that requires additional exploration is whether higher frequency of exposure to victimization (low or high) is associated with mental health or substance abuse outcomes. In addition, the effect of the respondent's perception of why he or she was the target of victimization (e.g., whether he or she feels it was due to personal characteristics such as sexual orientation/gender identity and/or race) on mental health outcomes also merits further investigation (Mays & Cochran, 2001). These

additional items would assist in development of a more comprehensive scale that could be used in (a) a broader understanding of population health needs; (b) applications at the individual level for better screening in health care settings; and (c) better data at the health systems level to ensure a more comprehensive approach to data collection and treatment referrals.

Limitations

While the high response rate (80%) is a strength of this study, the Honor Project was based on a convenience sample and so the results are not generalizable to American Indian and Alaska Native LGBTT-S individuals or communities in the United States. The current sample did not include those LGBTT-S individuals who did not see or respond to the advertisements or were not actively recruited for the study through the sampling methodology. In addition, the Honor Project focused on seven urban areas, and therefore rural AI/AN LGBTT-S were deliberately omitted from this study's focus. Stratified analyses based on urban location were not possible, due to the small number of recruits from some locations; thus we were unable to examine differences or associations pertinent to geographical or perhaps cultural variables. This sample is likely to underrepresent AI/AN LGBTT-S people who live in reservation communities, who are not connected to LGBT communities, and perhaps who do not feel comfortable discussing their sexual orientation/gender identity status. Including comparison groups, such as heterosexuals and non-AI/AN individuals, would strengthen the analyses. Finally, a longitudinal study would benefit these communities to confirm the relationships between predictors, such as BRV, and mental health and substance abuse outcomes.

Conclusion

Acknowledging sexual orientation/gender identity in the larger U.S. society continues to create physical and social risks for members of lesbian, gay, bisexual, transgender, and two-spirit communities. The results of this convenience sample analysis demonstrate the need for further research in this area to comprehensively explore the risk factors for American Indian and Alaska Native LGBTT-S individuals. In particular, given the level of victimization experienced by this sample and the association with generalized anxiety disorder, there is a need to confirm this relationship to improve health access for this community and enhance the health care they receive. By analyzing the association between bias-related victimization and mental health outcomes across a national or regional sample, it would be possible to confirm these findings. It would also enable a more comprehensive analysis to include review of a possible dose-response relationship, which would enhance opportunities to develop interventions and improve clinical treatment modalities.

This study demonstrates the need to include questions on violence exposure and racial affiliation for at-risk minority populations to better examine relationships between individual factors and health outcomes at the population level. Health care settings available to AI/AN LGBTT-S people, in particular urban Indian health care clinics, should provide education to

providers and health care staff to institutionalize supports within and across health care settings that promote disclosure on victimization. These types of system-level supports would contribute to a more productive health dialogue not only between individuals and their providers, but across health care settings in general and thus improve identification and assessment of at-risk individuals. In addition, including victimization measures in national surveys would provide data to clarify our understanding of the factors affecting AI/AN LGBTT-S individuals, and other LGBT individuals across racial groups. Our results indicate that there is a potential relationship between BRV and generalized anxiety disorder. There is a need to confirm this finding to lend support for meaningful improvements in how the United States addresses mental health needs related to victimization and how the health care system responds to these critical issues.

Although this study must be considered against the limitations of the study design, the combined experience of being AI/AN and LGBTT-S for this group meant exposure to discrimination and violence. In addition, they experienced important mental health outcomes, in particular, the clinical symptoms of generalized anxiety disorder. The intersectionality of identities presents an important theoretical orientation to improve our understanding of the relationship between BRV and mental health outcomes for marginalized groups. This study provides additional support to the need to include diverse populations in research. It also supports clinical changes that incorporate questions about bias and discrimination to better tailor mental health care for populations that have a higher risk.

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