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# Extending the Shadow of Sexual Assault Hypothesis: Fear of Sexual Violence and Hate Crimes among Lesbian, Gay, Bisexual, and Transgender Persons

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## Abstract

Women's fear has been explained as rooted in fears of sexual assault—a phenomenon known as the shadow of sexual assault hypothesis. The current study extends this hypothesis to examine whether lesbian, gay, bisexual, and transgender persons' fear of hate crimes is shadowed by fears of sexual assault. Results indicate that bisexual and transgender persons express greater fear of hate crimes relative to others. This fear is explained by their fear of sexual assault—supporting the shadow hypothesis for bisexual and transgender persons. Findings suggest the importance of fear of sexual assault in explaining sexual and gender minorities' fear of hate crimes.

## Keywords

shadow of sexual assault, fear of crime, hate crime, LGBT, gender

Fear of crime refers to feelings of dread associated with the prospect of victimization (Rader, 2023). Reducing public fear of crime has been a significant issue since it was recognized by the President's Commission on Law Enforcement and Administration of Justice Report (1967) as eroding Americans' quality of life. Decades of prior research

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has identified a range of negative consequences associated with fear, including psychological distress (Rader, 2023; Skogan, 1986) and avoidance behaviors (Rader et al., 2007). Furthermore, this body of work has linked numerous personal characteristics to fear of crime. One consistent pattern observed in the literature is that cisgender women—despite their lower risk of victimization—tend to be more fearful of crime relative to cisgender men. The shadow of sexual assault hypothesis by Ferraro (1996) offers a theoretical framework that explains this phenomenon, proposing that women's greater fear of crime relative to men is a result of their fear of sexual assault. Specifically, Ferraro (1996) argued that women's fear of crime in general stems from a fear that any victimization may contemporaneously escalate into sexual assault. The hypothesis has garnered wide support in explaining gender differences in fear of crime (e.g., Fisher & Sloan, 2003; Mellgren & Ivert, 2019).

Despite extensive support for the hypothesis by Ferraro (1996), there exist important shortcomings within the body of literature. First, few scholarly works have tested the hypothesis among minoritized groups, particularly among sexual and gender minorities (c.f., Doude & Cook, 2023). Given that heterosexual and cisgender norms are prevailing and shape perceptions of gender and sexuality in our society (McGlashan & Fitzpatrick, 2017), the LGBT (i.e., lesbian, gay, bisexual, and transgender)<sup>i</sup> community is especially vulnerable to crime, including hate crime (Gyamerah et al., 2021). Importantly, like cisgender women, there is an elevated risk among LGBT populations for sexual violence, given that members of the LGBT community are often marginalized due to their sexual and/or gender identities (Walters et al., 2013). It is possible that LGBT persons' perceived vulnerability specific to sexual assault may influence their fear of being targeted for hate crime. Given the role of gender norms in shaping individual's perceived risk and willingness to interact with criminal justice authorities (Gyamerah et al., 2021), it is important to understand how gender identity may similarly influence fear. This study proposes that the shadow of sexual assault hypothesis may potentially explain fear of crime experienced within the LGBT community. LGBT persons' fear of hate crime victimization may be grounded in their elevated fear of sexual victimization (Campbell, 2019; Martin et al., 2022). The mechanism underlying fear, how it manifests, and what influences fear across identities remain empirically underexamined among LGBT persons. The lack of knowledge concerning how fear manifests among the members of the LGBT community is consequential. In particular, efforts to develop tailored policies to address the fear of crime among specific populations are undermined, potentially leading to persistent fear among this vulnerable population (Kujala et al., 2019; Palmer & Greytak, 2017).

The current study explores whether the hypothesis by Ferraro (1996) explains the link between respondents who identify as LGBT and the fear of hate crime by examining if their fear of sexual assault may shadow their fear of hate crimes. Specifically, the study tests (a) whether LGBT individuals' fear of hate crime is greater relative to their cisgender heterosexual counterparts, and (b) whether such a relationship can be explained or mediated by their differing levels of fear of sexual assault. This study adds to our understanding of fear of crime among LGBT persons that might be distinct

from their cisgender, heterosexual counterparts. The current study employs data collected from a purposive online sample of US residents ( $n = 1,806$ ) vulnerable to hate crime because of their group membership(s).

## **Fear of Crime**

As noted above, fear of crime carries significant consequences, including negative psychological outcomes and disruption of one's daily routines, potentially undermining one's quality of life (Rader, 2023; Skogan, 1986). Beyond this, fear has been identified as leading to urban flight, which in turn may increase disorder that consequently facilitates crime, referred to by Skogan (1986) as the spiral of decay. Beyond this, fear of hate crime may be particularly consequential, given the unique nature of these offenses. Recently, national-level estimates indicate that more than 1 million violent hate crimes were perpetrated between 2015 and 2019, and that hate crimes have increased in prevalence over this period, with more than 40% of experiences not reported to police (Kena & Thompson, 2021). Despite this, few works have specifically examined the consequences of fear of hate crime relative to other crime-specific fears.

Over the past several decades, a range of theoretical frameworks have emerged to offer potential explanations for the observed trends relating to fear of crime. The shadow of sexual assault hypothesis by Ferraro (1996) explains gendered gaps in fear and the paradoxical trend that despite an empirically lower risk for a majority of crimes, women's fear far outpaces men's (Fisher & Sloan, 2003; Hilinski, 2009; Rader, 2023). Ferraro (1996) argues that women's fear of sexual assault increases their generalized fear of crime because of the fear that any victimization may escalate into sexual violence. The shadow of sexual assault hypothesis has been empirically supported across contexts. For instance, Fisher and Sloan (2003) found that fear of sexual victimization guided college women's fear of various crimes, such as automobile theft and burglary. Further, Henson and colleagues (2022) examined whether women's fear of online victimization was guided by their fear of being subject to unwanted sexual advances online. Findings indicated that fear of unwanted advances online explained women's elevated fear of online crime more generally, including fears of threats, identity theft, and harassment, and that the shadow of sexual assault hypothesis may go beyond direct-contact sexual victimization to explain gendered patterns of fear in other contexts. The shadow of sexual assault hypothesis has also been supported in different cultural contexts such as South Korea (Choi et al., 2020) and Sweden (Mellgren & Ivert, 2019).

## ***Gender and Sexual Identity, Fear, and Victimization***

LGBT persons face a higher risk of a range of crimes than cisgender, heterosexual persons, including both sexual victimization and hate crime (Campbell, 2019; Hayes & Maher, 2023; Kutateladze, 2022; Martin et al., 2022). Among a nationally representative sample, Walters and colleagues (2013) found that lesbian women and gay men and bisexual men and women, especially bisexual women, were at a greater risk of sexual violence, stalking, and intimate partner violence. When considering hate

crime, Herek (2009) notes that approximately 20% of LGBT persons have experienced some form of hate crime, while Burks and colleagues (2018) found that approximately one-third of lesbian, gay, and bisexual persons in their sample had experienced such victimization. The US Department of Justice (2023) notes that more than 9,000 hate crimes were reported across the United States in 2021, an 11.6% increase from 2020, and hate crimes related to sexual orientation, gender, and gender identity represented 20.4% of all single-bias incidents reported in 2022. Despite the significant risk of *both* hate crime and sexual victimization among LGBT persons, which may drive levels of fear, there exists only a small body of literature examining the fear of crime among LGBT populations specifically.

The analysis by Otis (2007) is among the earliest studies that examine sexual minority populations' fear. Based on a sample of 272 gay and lesbian persons, findings indicated that lesbians were more fearful of crime among the sample, and that fear was predicted by past victimization experiences, with prior property crime victims fearing property crime to a greater extent than nonvictims. More recently, Daigle and colleagues (2022) found that persons identifying as sexual minorities were more likely to feel unsafe within their communities, while transgender persons indicated feeling less safe at night. However, neither studies above considered LGBT persons' fear of hate crime and/or sexual violence, despite the fact that they are especially vulnerable to these specific types of crimes. This is an important gap, given calls to move away from generalized fear measures to consider specific types of fears (Lee et al., 2020). Broadly, LGBT persons' fears of crime may differ from their cisgender heterosexual counterparts because members of the LGBT community often face marginalization and stigmatization surrounding their identities (Gyamerah et al., 2021). For instance, bisexual and transgender persons have been described as doubly marginalized due to perceived threats to monosexism and gender binaries (Jourian, 2015; Rogers et al., 2023; Weiss, 2011). Furthermore, the *in terrorem* effect, where the vicarious experiences of others within one's community can inform one's own perceptions of fear, given the perceived randomness of these attacks (Perry & Alvi, 2012), may also lead to elevated levels of fear of hate crime. Nevertheless, similar to cisgender women, it is possible that fear of sexual violence shapes this overall fear of hate crime, given the permeance of gender norms and norms around heterosexuality within the society.

Prior works have demonstrated that gender norms surrounding masculinity and femininity and one's self-presentation influence how fear of crime manifests. The recent analysis of hate crime among LGBTQ persons in San Francisco by Gyamerah and colleagues (2021) found that women who felt that their gender identity was questioned based upon presentation were more likely to experience hate crimes relative to others, suggesting a potentially important role that gender presentation may play in affecting individual perceptions of fear (Billard, 2019). Sutton and colleagues' (2011) analysis of self-presentation and fear among men and women in England indicated that cisgender women's ideal self-presentation was characterized by curtailed activities stemming from their greater fear of crime, in line with gender norms (Rader, 2023). Conversely, Sutton and colleagues (2011) explain that men's lower levels of fear of crime reflect "emotional invulnerability and self-sufficiency" (p. 421). This conforms with the discussion of gendered norms surrounding fear of

crime by Rader (2023). Taking this into account, manifestations of fear vary across men and women, with women expressing greater fear, which is often internalized, due to internalized sexism, and the notion of fear myths wherein women are perceived as victims, while men externalize fear and adopt protective responses to fear. Despite this, it remains unclear whether these self-presentations shape gender minorities' fear that is distinct from the fear experienced by cisgender persons and how they internalize these myths surrounding gender and fear (Rader, 2023). The current study seeks to understand whether LGBT persons fear of hate crimes are rooted in fears of sexual victimization similar to the hypothesis by Ferraro (1996).

Due to the frequently low samples of transgender persons, existing research has included transgender persons in the same group as lesbian, gay, or bisexual persons. Only a few studies disaggregate sexual and gender identities (e.g., Grinshteyn et al., 2020; Rogers et al., 2023). For example, Rogers et al. (2023) found that transgender and non-binary persons as well as those persons with the LGBQ status were associated with higher levels of fear of victimization. Consequently, gender minorities are socially vulnerable and perceive greater risk of victimization due to inequality and power dynamics at the societal level (Franklin & Franklin, 2009). Furthermore, transgender individuals can be oppressed not only by their gender identity, but also by their sexuality (Rogers et al., 2023).

It may be that persons with minoritized gender and sexual identities process emotional responses to crime differently relative to cisgender, heterosexual persons, particularly crimes stemming from experienced discrimination. For instance, Tavarez (2022) notes that bisexual persons are subject to not only marginalization from cisgender, heterosexual populations, but also within LGBT spaces, due to differential gendered dynamics across groups associated with monosexism—the extension of heterosexism that promotes strict binaries across relational contexts (Jourian, 2015; Whiting et al., 2012). Tavarez (2022) found that among bisexual LGBTQ campus activists, biphobia within LGBTQ spaces led to burnout and a range of deleterious consequences, such as feelings of hypervigilance and disconnection within LGBTQ spaces (Balsam & Mohr, 2007). This notion is extended in the reflective analysis by Weiss (2011), which notes that within gay, lesbian, bisexual, and transgender communities, a “GL versus BT” mentality manifests, referring to internalized prejudice against both bisexual and transgender persons within these communities. Weiss (2011) notes that this stems from heterosexism, due to these groups challenging norms of monosexism among gay and lesbian identities. That is, bisexual persons may face stigma from both the heterosexual community and gay/lesbian community in which they are viewed as promiscuous (Balsam & Mohr, 2007; Friedman et al., 2014; Lewis et al., 2009). Taken together, gender and sexual minorities' perceptions and fear may vary not only from cisgender persons, but between sexual and gender identities. Fear may be most felt among those who face not only an external risk of marginalization and hate crime, but also intracommunity threats associated with their identities.

One study to date has considered these processes. Doude and Cook (2023) examined whether the theory by Ferraro (1996) can explain the fear of crime among sexual minority college students. Findings did not support the shadow of sexual

assault hypothesis, showing that heterosexual persons' fear of sexual violence was more strongly associated with general fear relative to sexual minority persons. Despite this, their analysis failed to disaggregate across specific identities. Such a global measure does not consider how fear manifests across specific subgroups within the LGBT community. Therefore, examinations of fear among minoritized groups considering both sexual and gender minorities are needed to determine if this is indeed a nonsignificant association, and how this association manifests across identities (Pridemore et al., 2018). As noted above, levels of fear may vary within the LGBT community due to double marginalization experienced by transgender and bisexual members by the LGBT community, potentially resulting in greater fear among marginalized persons (Tavarez, 2022). For instance, it may be that fear varies across sexual minorities, and is concentrated in certain subpopulations which face greater levels of marginalization, both from within the LGBT community and from their non-LGBT counterparts, such as bisexual and transgender persons (Jourian, 2015; Whiting et al., 2012).

## Current Study

The current study examines whether the shadow of sexual assault hypothesis is supported within the LGBT community. Specifically, the study examines whether fear of sexual assault can explain fear of various forms of hate crimes among LGBT persons that is distinct from that of their cisgender, heterosexual counterparts. As such, two main hypotheses were tested:

H1: Respondent who identify as LGBT will be associated with a greater fear of hate crimes.

H2: The relationship between respondents who identify as LGBT and fear of hate crimes is at least partially mediated through fear of sexual assault. Specifically, the greater fear of hate crimes among LGBT individuals can be partially attributed to their increased fear of sexual assault when compared to their heterosexual, cisgender counterparts.

## Method

*Data and samples.* Our data were collected from an online experimental survey fielded to a purposive selection of individuals drawn from Amazon's Mechanical Turk (MTurk) between November 2021 and April 2022. MTurk is an opt-in panel platform that recruits individuals to complete web-based tasks, known as Human Intelligence Tasks (HITs), in exchange for monetary compensation. All participants were directed from their recruitment portal, MTurk, to a Qualtrics survey. The survey purposefully sampled those who are vulnerable to hate crime because of their group membership(s): (a) racial or ethnic minority, (b) non-Christian, (c) sexual minority (i.e., does not identify as heterosexual), (d) person with a disability, (e) cisgender woman or non-binary

gender identity or, (f) a transgender individual (FBI, 2022). In other words, White, cis-gender, heterosexual, Christian men without a disability were not eligible for participation. Since main survey items focused on the six-month time period prior to the survey, individuals who had lived in the US for six months or less were also excluded.

We initially recruited 1,857 MTurk workers who met the criteria for our target respondents. They also had previously completed 500 or more HITs with at least a 97% approval rating and passed attention checks that were included throughout the survey to screen out inattentive participants.<sup>ii</sup> After excluding those who refused to answer some of the demographic questions ( $N=25$ ) together with non-binary ( $N=8$ ) and asexual ( $N=18$ ) individuals,<sup>iii</sup> the final sample was composed of 1,806 respondents (see Table 1). While certainly a limitation, this removal was due to the small group size for disaggregated analyses. Respondents randomly received one of the three versions of the questionnaire that varied the question wordings that are commonly used to measure the fear of hate crime—(1) worry, (2) fear, or (3) perceived safety as inter-related responses to the perceived threat of victimization (May et al., 2010; Rader, 2004). Thus, we use the term “fear” to represent subjective or perceived threat of hate crime that these three wordings capture universally. To be clear, the question wordings were experimentally manipulated to control for the wording effects on fear responses (names of the authors are removed). Results of balance tests (not reported here) indicated no systematic differences in participants’ sociodemographic characteristics and victimization experiences across the wording conditions.

## Measures

*Dependent variables: Fear of victimization: Sexual assault and hate crimes.* Adopting Farrall and colleagues’ (Farrall, 2004; Farrall & Gadd, 2004) approach, we used episodic questions that assess everyday experiences of fear of sexual assault, as well as five forms of hate crimes associated with one’s (1) race/ethnicity, (2) religion, (3) sexual orientation, (4) disability, or (5) gender or gender identity. Sexual assault is considered as any type of forced or coerced sexual contact or behavior that occurs without the consent of the victim (U.S. Department of Justice, 2016). While sexual assault may involve physical force, hate crime victimization is not limited to specific forms, whether physical or psychological. Instead, it encompasses any incident motivated by the offender’s bias or hatred against a certain group (FBI, n.d.). The set of measures used in this study includes filter questions that asked about prevalence of fear of sexual assault and hate crimes in the past six months (i.e., whether or not individuals experience fear). First, the prevalence measures relating to sexual assault were phrased: “In the past six months, have you ever felt [worried/fearful/unsafe] about becoming a victim of sexual assault?” Second, prevalence measures for hate crime were phrased: “In the past six months, have you ever felt [worried/fearful/unsafe] about becoming a victim of crime because of someone’s hatred or bias against your [race/ethnicity/religion/sexual orientation/disability/gender or gender identity]?” Before presenting the fear items, participants were provided with the following definition of hate crime: “According to the federal government, a hate crime is defined as a criminal offense

**Table 1.** Measurement of Descriptive Statistics (Total  $N = 1,806$ ).

	<i>N (%)</i>
<b>Frequency fear of crime in the past six months (frequent)</b>	
Sexual assault	455 (25.2%)
Anti-race/ethnicity hate crime	593 (32.8%)
Anti-religion hate crime	486 (26.9%)
Anti-sexual orientation hate crime	450 (24.9%)
Anti-disability hate crime	427 (23.6%)
Anti-gender/gender identity hate crime	407 (22.5%)
<b>LGBT (global)</b>	634 (35.1%)
<b>Transgender</b>	135 (7.5%)
<b>Sexual orientation</b>	
Straight	1209 (66.9%)
Gay man	125 (6.9%)
Lesbian woman	122 (6.8%)
Bisexual	350 (19.4%)
<b>Female</b>	864 (47.8)
<b>Race/ethnicity (White/Caucasian)</b>	1453 (80.5%)
<b>Religion</b>	
Christian	663 (36.7%)
Catholic	604 (33.4%)
Other	105 (5.8%)
No religious affiliation	434 (24.0%)
<b>Disability</b>	690 (38.2%)
<b>Direct hate crime victimization</b>	
Anti-race/ethnicity hate crime	465 (25.7%)
Anti-religion hate crime	354 (19.6%)
Anti-sexual orientation hate crime	361 (20.0%)
Anti-disability hate crime	352 (19.5%)
Anti-gender/gender identity hate crime	371 (20.5%)
<b>Vicarious hate crime victimization</b>	
Anti-race/ethnicity hate crime	480 (26.6%)
Anti-religion hate crime	393 (21.8%)
Anti-sexual orientation hate crime	421 (23.3%)
Anti-disability hate crime	366 (20.3%)
Anti-gender/gender identity hate crime	388 (21.5%)
<b>Age</b>	<i>M (SD): 38.92 (11.38)</i>

that is intended to hurt and intimidate a person because of their race, ethnicity, religion, sexual orientation, disability, gender, and gender identity.” Participants were then informed that they will receive questions asking about their feelings toward hate crimes in the past six months. In this sense, it is important to note that our measures of fear of hate crimes specifically pertain to hate-related crimes and are distinct from the incidents of sexual assault. Response options were binary: 1 = Yes, felt [*worried/fearful/unsafe*] and 0 = No. Across wording conditions, around a third of the sample reported experiencing fear of sexual assault ( $N = 600$ ; 33.2%) over the past six months. Around one quarter to two-

fifths of the sample reported experiencing of hate crime against their race/ethnicity ( $N = 721$ ; 39.7%), religion ( $N = 564$ ; 32.1%), sexual orientation ( $N = 522$ ; 28.9%), disability ( $N = 476$ ; 26.4%), or gender/gender identity ( $N = 503$ ; 27.9%).

Individuals who answered “yes” to the yes/no prevalence item received follow-up frequency questions. Filter questions were intended to minimize the chance of survey questions leading respondents to provide responses about issues that have little to do with their experiences. For both sexual assault and hate crimes, the frequency measures (six items) were phrased: “How frequently have you felt like this in the past six months?” Response options were 1 (only a few times), 2 (about once a month), 3 (about once a week), 4 (a few times a week), and 5 (almost/every day). Following existing approaches (Farrall & Gadd, 2004), we constructed six binary measures of fear as our main outcome variables. For each measure, “zero” (answered “no” to the yes/no prevalence items) and “only a few times” categories were categorized into one category of “infrequent,” (coded 0), while the other frequency categories were collapsed into one category of “frequent” (coded 1). Statistical justifications for combining categories are detailed in the Analytic Strategy section.

*Independent variables: LGBT.* To measure self-reported LGBT identity, we used two items including (1) *transgender* individual and (2) *sexual orientation*. Respondents completed a single yes/no question that asked: “Do you consider yourself to be Transgender?,” where 1 = yes and 0 = no. A total of 135 (7.5%) respondents answered affirmatively to this item. To measure sexual orientation, respondents were asked: “People are different in their sexual attraction to other people. Which best describes your feelings?” The item was coded as 1 = heterosexual, 2 = gay man, 3 = lesbian woman, and 4 = bisexual. While we included separate measures of sexual orientation and if the respondent was transgender based on the aforementioned categories, for baseline analyses, we also constructed a binary *global LGBT* measure by combining responses to these two items, where 1 = LGBT<sup>iv</sup> and 0 = cisgendered heterosexual counterparts.

*Control variables.* Participants completed a five-item measure of direct hate crime victimization that asked: “In the past six months, have you been a victim of crime because of someone’s hatred or bias against your [race/ethnicity, religion, sexual orientation, disability, and gender or gender identity]?” They also completed a five-item measure of vicarious hate crime victimization that asked if someone they knew had experienced a hate crime. Response options were 1 = yes and 0 = no for each of the items. For multivariate analyses, each model controlled for the corresponding direct and vicarious victimization, given the association between these themes and victimization (Lee et al., 2020; Lee et al., 2022). We additionally controlled for several demographic characteristics which may differentially influence fear of the above forms of hate crimes, such as disability status or religion. Demographic characteristics included gender (1 = cisgender female respondents), race/ethnicity<sup>v</sup> (1 = White (80.5%), 0 = people of color, inclusive of 9.8% Black, 8.8% Asian, 3.7% Hispanic or Latin, 2.7% American Indian or Alaska Native, 0.7% Native Hawaiian or Other Pacific Islander, and 0.2% Middle Eastern), religion (1 = Catholic, 2 = Christian, 3 = other and 4 = no religion), disability (1 = persons with a disability), and age (years).

## Analytic Strategy

As a preliminary analysis, we first examined cross-tabulations between LGBT status and fear of sexual assault in the past six months (Table 2). Next, we conducted multivariate analyses to test whether LGBT status is related to fear of sexual assault and hate crimes while controlling for other individual characteristics (Table 3). Given that items for frequency of perceived threat of crime were originally collected as ordinal measures, the Brant test was conducted to check the assumption of proportional odds for ordinal regression analysis. The assumption of parallel regression was not supported by our data. We therefore utilized binomial logistic regression models by collapsing the Likert scales into binary measures (frequent/infrequent fear). This approach was chosen over using a multinomial regression model, which is less parsimonious and even more complex to interpret than the proportional odds model (Williams, 2006). For each crime type, inclusive of sexual assault and hate crimes, we examined two models that predicted experiences of fear of victimization in the past six months (1 = frequent). Model 1 used a global LGBT measure, while Model 2 used disaggregated measures of gender identity (i.e., transgender or cisgender) and sexual orientation (i.e., straight, gay, lesbian, or bisexual). A series of likelihood-ratio tests compared the fit between the two models. In all cases, the use of disaggregated measures (Model 2) fitted the data better.

When hate crime was the outcome, fear of sexual assault was added in Model 3. Model 3 examined the extent to which the effect of LGBT status is reduced by the inclusion of perceived threat of sexual assault, as should be expected if the relationship is at least in part attributable to perceived threat of sexual assault. The analysis

**Table 2.** Frequency of Fear of Sexual Assault, Given If The Respondent Identified as LGBT (N = 1,824).

	Frequency of fear of sexual assault in the past six months			$\chi^2$ (df)	Phi coefficient ( $\Phi$ )
	Frequent	Infrequent	Total		
<b>LGBT (global)</b>				132.26 (1) ***	.27
LGBT	261 (41.2%)	373 (58.8%)	634 (100%)		
Heterosexual	194 (16.6%)	978 (83.4%)	1172 (100%)		
cisgender					
<b>Transgender</b>				152.87 (1) ***	.29
Transgender	94 (69.6%)	41 (30.4%)	136 (100%)		
Cisgender	361 (21.6%)	1310 (78.4%)	1671 (100%)		
<b>Sexual orientation</b>				115.33 (3) ***	.25
Straight	218 (18.0%)	991 (82.0%)	1209 (100%)		
Gay man	36 (28.8%)	89 (71.2%)	125 (100%)		
Lesbian woman	42 (34.4%)	80 (65.6%)	122 (100%)		
Bisexual	159 (45.4%)	191 (54.6%)	350 (100%)		

\*\*\* $p < .001$ .

**Table 3.** Logistic Regression Predicting the Frequency of Fear of Crime in the Past Six Months (1 = Frequent) (Unstandardized Coefficients; N = 1,806).

Predictors	Sexual assault			Anti-race/ethnicity hate			Anti-religious hate		
	Model 1	Model 2		Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<b>LGBT (global)</b>	.90***	1.49***		.08	.45	.11	.61***	1.53***	1.16***
<b>Transgender</b>									
<b>Sexual orientation (rf: straight)</b>									
Gay man		.26			−.85**	−1.11**		.24	.13
Lesbian woman		.53*			.07	.21		−.37	−.59
Bisexual		.73***			.35*	.15		.53**	.31
<b>Fear of sexual assault</b>						1.78***			1.70***
<b>Controls</b>									
Female	.57***	.59***		.04	−.06	−.32*	.15	.26	.02
Race (rf: White)	−.01	.03		−.62***	−.61***	−.71***	−.04	.001	−.003
Religion (rf: no religion)									
Catholic	1.20***	1.14***		.88***	.80***	.76**	2.51***	2.49***	2.38***
Christian	1.19***	1.10***		.87***	.82***	.80**	2.45***	2.40***	2.28***
Other	1.29***	1.18***		.85*	.80*	.64	2.30***	2.26***	2.06***
Disability	1.22***	1.11***		.96***	.92***	.92***	.99***	.91***	.89***
Age	−.02**	−.02**		−.01	−.01	−.01	−.004	−.001	.003
Direct hate victimization				2.10***	2.10***	1.72***	1.93***	1.90***	1.66
Vicarious hate victimization				1.18***	1.14***	.92***	1.66***	1.60***	1.26***
Pseudo R <sup>2</sup>	.17	.18		.38	.38	.43	.43	.45	.50
χ <sup>2</sup> (df)	340.53 <sub>(8)</sub> ***	375.64 <sub>(11)</sub> ***		864.32 <sub>(10)</sub> ***	879.57 <sub>(13)</sub> ***	986.41 <sub>(14)</sub> ***	914.91 <sub>(10)</sub> ***	944.76 <sub>(13)</sub> ***	1041.82 <sub>(14)</sub> ***

(continued)

Table 3. (continued)

Predictors	Sexual assault			Anti-race/ethnicity hate			Anti-religious hate		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
ROC AUC	.78	.79	.88		.88	.90		.91	.93
AIC	1724.28	1699.17	1456.09		1450.84	1346.00		1202.74	1107.68
BIC	-280.54	-293.15	-789.33		-782.09	-881.42		-847.28	-936.84
LR test: $\chi^2$ (df)		35.12 *** (3)			15.25 *** (3)	106.84 *** (1)		29.85 *** (3)	97.06 *** (1)
Predictors	Anti-sexual orientation hate			Anti-disability hate			Anti-gender/gender identity hate		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
LGBT (global)	.68***								
Transgender		1.25***	.90**		.83**	.36		.82***	1.40***
Sexual orientation (rf: straight)									1.06***
Gay man		-.08	-.33		.20	.01		.30	.13
Lesbian woman		-.04	-.28		-.49	-.78		.24	-.001
Bisexual		.57**	.32		.56**	.35		.55**	.29
Fear of sexual assault			2.27***			2.04***			2.49***
Controls									
Female	.29*	.33*	.16		.20	.01		.41**	.26
Race (rf: White)	.21	.26	.31		.22	.23		-.18	-.19
Religion (rf: no religion)									
Catholic	1.70***	1.62***	1.48***		1.42***	1.11**		1.16***	1.14***
									.99**

(continued)

**Table 3. (continued)**

Predictors	Sexual assault			Anti-race/ethnicity hate			Anti-religious hate		
	Model 1	Model 2		Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Christian	1.39***	1.31***		1.12**	1.29***	1.20***	1.00**	.84**	.79**
Other	1.33**	1.22**		.89*	1.08*	1.01*	.69	1.32***	1.23**
Disability	1.22***	1.17***		1.11***	1.44***	1.41***	1.39***	.97***	.91***
Age	-.01	-.01		-.01	-.01	-.01	-.004	-.02*	-.02*
Direct hate	1.69***	1.61***		1.36***	1.47***	1.44***	1.22***	1.59***	1.51***
victimization									
Vicious hate	1.22***	1.20***		.79***	1.47***	1.41***	1.15***	1.17***	1.16***
victimization									
Pseudo R <sup>2</sup>	.37	.38		.47	.39	.39	.47	.33	.34
$\chi^2$ (df)	744.46 (10) ***	762.06 (13) ***		961.12 (14) ***	760.49 (10) ***	774.32 (13) ***	929.99 (14) ***	637.45 (10) ***	659.17 (13) ***
ROC AUC	.89	.89		.93	.90	.90	.93	.88	.88
AIC	1317.39	1309.79		1112.73	1249.04	1245.21	1091.54	1323.95	1312.23
BIC	-669.47	-664.58		-856.14	-685.50	-676.83	-825.00	-562.46	-561.68
LR test: $\chi^2$ (df)		17.60 (3) ***		199.06 (1) ***		13.83 (3) **	155.67 (1) ***	21.72 (3) **	243.64 (1) ***

Note. LR test = Likelihood-ratio test (vs. previous model).

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

suggested the presence of mediated relationships between LGBT status and most types of hate crimes *via* perceived threat of sexual assault. The likelihood-ratio tests indicated that in all cases, adding perceived threat of sexual assault improved prediction of fear of hate crimes. Furthermore, the variance inflation factors (VIF) were acceptable (highest mean VIF = 1.42 across models), indicating little multicollinearity.

The next analysis thus examined the hypothesized mediating role of fear of sexual assault in explaining increased subjective threat of hate crimes among LGBT persons. Given our dichotomous outcome variables (frequent fear vs. infrequent fear), we used generalized structural equation modeling (GSEM) using the Bernoulli-Logit function to examine direct and indirect associations between LGBT status and fear of hate crimes *via* fear of sexual assault (Table 4). GSEM was chosen because of its ability to better test for mediation models by calculating the actual proportions of direct and indirect associations between exogenous and endogenous criteria (Kline, 2016). GSEM is an application of generalized linear modeling that affords all the capabilities of structural equation modeling (SEM), while also allowing the analysis using non-linear assumptions necessary to model dichotomous data.

## Results

*LGBT and fear of sexual assault.* As presented in Table 2, we first examined the frequency of fear of sexual assault among LGBT individuals compared to their cisgender, heterosexual counterparts. A greater proportion of LGBT persons reported frequent fear of sexual assault compared to cisgender heterosexual persons in the past six months. Considering disaggregated measures, most transgender persons reported “frequent” fear of sexual assault. This is to be contrasted with the vast majority of cisgender persons who fell into the “infrequent” fear group. A greater proportion of sexual minority respondents (selected a sexual orientation identity other than heterosexual) were in the “frequent” fear group compared to their heterosexual counterparts. Bisexual persons were most likely to report frequent fear of sexual assault, followed by lesbian, gay, and heterosexual persons. Significant Chi-square tests of independence showed preliminary evidence of the relationship between LGBT status and perceived threat of sexual assault.

As reported in Table 3, multivariate logistic regression analysis further supported associations between LGBT status and fear of sexual assault even when controlling for individual characteristics. LGBT persons were more likely than cisgender heterosexual persons to report frequent fear of sexual assault (Model 1). When we disaggregated the global LGBT measure, we found that transgender persons (vs. cisgender) and lesbian and bisexual persons (vs. heterosexual) reported frequent fear of sexual assault (Model 2).

*LGBT and perceived threat of hate crimes.* Table 3 also presents multivariate analyses of how LGBT status is related to fear of hate crime across different bias motivations—race/ethnicity, religion, sexual orientation, disability, and gender/gender identity. Models that used a global LGBT measure showed that LGBT persons were more likely than cisgender heterosexual persons to frequently experience fear about all

types of hate crimes in the past six months, except anti-race/ethnicity hate crime. Model 2 that used the disaggregated measures of LGBT showed that bisexual persons (vs. heterosexual) tended to frequently experience fear about all types of hate crimes. Gay men tended to report infrequent fear of anti-race/ethnicity hate crime when compared to heterosexual persons. In comparison with Model 1, Model 2 with disaggregated measures resulted in a better model fit in all cases ( $p < .01$ ). We therefore focused on the association between transgender/sexual minority status and fear of hate crimes rather than using a global measure. These baseline analyses reinforce the importance of incorporating disaggregated measures of sexual orientation and gender identity.

Models 3 added fear of sexual assault. Frequent fear of sexual assault increased the odds of experiencing frequent fear about all types of hate crimes. The association between transgender identity and fear of anti-disability hate crime became non-significant and was reduced by 57% from Model 2 to Model 3 (Model 2:  $b = .83$ ,  $p < .01$  vs. Model 3;  $b = .36$ ,  $NS$ ). Despite significance, effects of transgender identity were substantially reduced (by 24% to 28%) for fear of anti-religious, anti-sexual orientation, and anti-gender/gender identity hate crimes after introducing fear of sexual assault. For all types of hate crimes, the effects of bisexual identity became non-significant and were reduced by 38% to 57% by the inclusion of fear of sexual assault. Overall, the analysis suggests that both transgender and bisexual identities are positively related to fear of hate crimes, and such relationships may be at least partially mediated through fear of sexual assault.

*LGBT, perceived threat of sexual assault, and perceived threat of hate crimes.* Next, using GSEM, we examined a hypothesized mediation model where transgender and bisexual identities are assumed to increase fear of sexual assault, which in turn increases fear of hate crimes. Based on our preliminary analyses that demonstrated only transgender and bisexual identities have significant relationships with fear of crime, other identity categories were excluded from the mediation models. For each type of hate crime, we partitioned the total effects into direct and indirect components. As presented in Table 4, for all types of hate crimes, indirect effects of transgender identity *via* fear of sexual assault were significant ( $p < .001$ ), explaining 69% to 96% of the total effects (i.e.,  $(b_{\text{indirect}}/b_{\text{direct}} + b_{\text{indirect}}) \times \text{Bernoulli-Logit } 100$ ). For fear of anti-race/ethnicity and anti-disability hate crimes, direct effects of transgender identity were not significant, indicating that the relationships between transgender identity and fear of these two hate crimes were almost entirely indirect *via* fear of sexual assault.

For all types of hate crimes, indirect effects of bisexual identity *via* fear of sexual assault were significant ( $p < .001$ ), explaining 77% to 86% of the total effects. For fear of anti-race/ethnicity, anti-religious, and anti-gender/gender identity hate crimes, direct effects of bisexual identity were not significant, indicating that the relationships between bisexual identity and fear of these three hate crimes were almost entirely indirect *via* perceived threat of sexual assault. Overall, the findings support the extension of the shadow of sexual assault hypothesis in that the vast majority of the relationships

**Table 4.** Generalized Structural Equation Modeling (GSEM): Direct and Indirect Effects of Transgender/Bisexual on the Fear of Hate Crime (Unstandardized Coefficients;  $N = 1,806$ ).

Predictors	Anti-race/ethnicity hate		Anti-religious hate		Anti-sexual orientation hate		Anti-disability hate		Anti-gender/gender identity hate	
	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect	Indirect effect
<b>Transgender</b>	-.10	2.68***	1.15***	2.62***	.83**	3.52***	.41	3.14***	1.09***	3.88***
<b>Bisexual</b>	.29	1.18***	.35	1.15***	.39*	1.54***	.41*	1.38***	.27	1.70***
AIC	3035.94		2789.12		2792.80		2807.18		2749.39	
BIC	3156.91		2910.10		2913.78		2928.16		2870.37	

*Note:* All models control for gender, race, religion, disability, age, direct victimization, and vicarious victimization; All direct effects of perceived sexual assault on the fear of hate crimes and all direct effects of transgender/bisexual on the fear of sexual assault were significant. GSEM does not provide features provided by SEM such as goodness-of-fit statistics and model fit using summary-statistic data.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

between transgender or bisexual identity and fear of hate crimes are indirect *via* fear of sexual assault.

## Discussion

The current study makes several contributions to the body of literature on gender and sexual minorities' fear of crime. First, the study expands our knowledge on fear among LGBT persons by demonstrating that one of the leading explanatory hypotheses of fear—the shadow of sexual assault hypothesis by Ferraro (1996)—is supported among LGBT persons when disaggregated measures are considered in analyses. More specifically, the findings indicate that fear of sexual assault mediates the relationship between transgender and bisexual identity and overall fear of hate crime. These themes are discussed below.

Findings that analyzed the global LGBT measure indicate that LGBT persons expressed more frequent fear of sexual victimization relative to their cisgender, heterosexual counterparts. This finding indicates that LGBT persons may be aware of their risk of sexual victimization and express fear in line with that risk (Hayes & Maher, 2023; Martin et al., 2022). In this sense, fear among LGBT persons may not reflect a paradoxical fear, but rather fear grounded in their elevated risk of sexual assault (Walters et al., 2013). Beyond this, the findings indicate that LGBT persons were more likely to express fear for all forms of hate crimes relative to others, with the exception of anti-race/ethnicity-motivated hate crime. This finding once again makes sense as LGBT status in itself appears to be less directly linked to risk of anti-race/ethnicity-motivated hate crime than other kinds of hate crimes, such as anti-gender/gender identity hate crime or anti-religious hate crime, whereby cisgender and heteronormative gender roles dominate (Perales & Bouma, 2019), and may evoke biases against minoritized persons. Further studies are needed to better understand whether LGBT status interacts with other forms of oppression to explain fear of specific hate crimes.

Concerning disaggregated measures of identity, our analyses lend support to the shadow of sexual assault hypothesis by Ferraro (1996) among transgender and bisexual persons, and show that both transgender and bisexual persons expressed greater fear of hate crime, and this fear is explained by the fear of sexual assault. Given this, the findings support the utility of disaggregating gender and sexual identity (Grinshteyn et al., 2020; Rogers et al., 2023), something not considered in earlier works. This can perhaps partly explain why existing research does not find support for the shadow of sexual assault hypothesis among sexual minorities (Doude & Cook, 2023). This suggests that the use of more nuanced measures of LGBT status can help determine where fear is concentrated within these vulnerable populations. Indeed, bisexual individuals are at a greater risk of sexual violence (Walters et al., 2013), and are doubly marginalized by both the heterosexual community and gay/lesbian communities, due to perceived threats to monosexism and gender binaries (Jourian, 2015; Rogers et al., 2023; Weiss, 2011). Consequently, their experiences and perceptions may result in elevated fear relative to both their cisgender, heterosexual counterparts as well as other members of the sexual minority community (Balsam & Mohr, 2007; Tavarez, 2022). Overall, the

findings demonstrate that the hypothesis by Ferraro (1996) can be supported among both transgender and bisexual persons, and that interestingly, these findings varied when examined through global and disaggregated measures of identity. This suggests that the shadow of sexual assault hypothesis is not consistent across LGBT identities, and that it is important to avoid treating gender and sexual minorities as a homogenous population.

Beyond this, our analysis highlights the potential for personal and vicarious victimization experiences to influence fear among LGBT persons. While not a core focus of the analysis, the findings indicate that prior victimization experiences were associated with elevated fear across disaggregated forms of hate crime, countering the findings from other works examining the association between victimization and fear (Daigle et al., 2022). This finding indicates that it may be that LGBT persons' fear, unlike the fear of cisgender women, is rooted in cognitive perceptions of risk. This is consistent with the *in terrorem* effect described by Perry and Alvi (2012), whereby the experiences of others can influence one's own perceptions, given the perceived randomness of these attacks. While an association between elevated perceived risk and fear may explain this phenomenon, it is important to note that since cognitive assessments of risk were not included within the analyses, a direct test of this association is beyond the scope of the current study. This possible explanation may be a fruitful area for future inquiry, however, in order to further examine the association between perceived risk and fear among populations whose risk varies.

Additionally, future works may consider how fear manifests along intersectional identities (Crenshaw, 1991). As noted above, the findings indicated that LGBT persons were more likely to express fear of race-based hate crime, a possible reflection of gendered racism or racist homophobia. Beyond this, other intersectional identities, such as disability status may interactively influence fear, particularly in light of the associations between fear and disability, as shown in Table 3. Given these findings, future works may consider how intersectional themes of race, gender, gender identity, and sexual orientation variously influence fear, and which intersectional identities experience the greatest levels of fear and reflect unique experiences of marginalization.

Based on the findings from the current study, several implications for policy and future research may be derived. First, the findings lend support to the extension of the shadow of sexual assault hypothesis as a means of explaining fear among minoritized populations, especially as it relates to gender and sexual orientation. For instance, future research may benefit from examining whether the shadow hypothesis is supported among other minoritized groups which face an elevated risk of sexual violence, such as persons—especially women—with disabilities (Ledingham et al., 2022). Beyond this, the findings have various policy implications. Namely, fear reduction programs should be tailored to those who are disproportionately at risk to ensure that the deleterious effects of fear are not concentrated within these vulnerable populations (Kujala et al., 2019). For instance, universities can implement tailored risk reduction strategies for LGBT populations and host such services within campus LGBT resource offices, where they may have the greatest impact. At a more fundamental level, efforts should be taken to not only to reduce fear of hate crimes and sexual violence among LGBT populations, but also to reduce the incidence of these forms of violence activities.

In this sense, more proactive crime prevention efforts acknowledging the unique role that gender and sexual identity play among the forms of violence may be considered. For example, campus LGBT resource centers may aid in reducing victimization by offering crime prevention information and tools to members of this community. Alternatively, more targeted policing of hot spots identified as areas where hate crime and sexual violence may occur may be implemented, to better respond to these consequential forms of victimization (Braga et al., 2014; Sherman & Weisburd, 1995).

Our study is not without limitations. First, the data analyzed for this study came from research examining hate and bias crimes among vulnerable populations. Given this, certain groups who were unlikely to be victims of such crimes—such as White Christian men without disabilities—fell outside the scope of the original study and were thus omitted from data collection. Findings should be interpreted with caution until efforts to replicate the study are undertaken including a broader sample that includes this group within the comparison group. Changes to the composition of the comparison group may affect the interpretation of findings. Second and relatedly, the data for the study does not offer insights into fear of crime more generally, beyond fear of hate and bias crime. Given this, the findings cannot reflect whether LGBT populations' fear of sexual victimization predicts fear of crime more generally, in line with the hypothesis by Ferraro (1996). Although the findings provide insights into LGBT populations' fears of hate crime for which they are disproportionately vulnerable (Campbell, 2019; FBI, 2022; Kutateladze, 2022), subsequent research should examine the hypothesis in light of fear of other forms of crimes.

Third, the data for the current study are cross-sectional. This undermines causal inference, given that the time-order between items cannot be determined. Future works should consider the use of longitudinal data to more clearly examine these associations and facilitate causal inference. Fourth, our measures of fear were constructed based on a series of contingency questions designed to capture episodic fear for each type of hate crime over a specific time period (Farrall, 2004). Given that different hate crimes are driven by different bias motivations, we did not construct a global measure of fear of hate crime by combining fear responses for different types of hate crimes. From a psychometric perspective, relying on single items can have greater face validity than multiple-item measures. However, it lacks the ability to assess psychometric properties such as internal consistency reliability and construct validity (Dolbier et al., 2005). Future research should develop psychometric measures of fear. Finally, given the small sample size, the current study necessitates the exclusion of certain gender and sexual identities, such as non-binary and asexual respondents. While methodologically necessary, their exclusion undermines the ability of the current study to examine the shadow of sexual assault hypothesis among these diverse identities. Future works need to focus analyses on these marginalized identities through targeted surveying.

Furthermore, the study did not include any measures relating to outward presentation and visible status as a member of the LGBT community. Research has demonstrated that self-presentation as a member of the LGBT community influences hate crime victimization (Gyamerah et al., 2021). Despite this, fear may of hate crimes may also be elevated among those whose self-presentation does not conform with

stereotypes, given their own internalized conception of their LGBT status and perceived risk. Regardless of whether a member of the LGBT community outwardly appears as such, fear of hate crime may be rooted in the eventuality that their LGBT status is discovered, even when one does not self-present in a stereotypical manner. Future works should more closely examine how self-presentation influences fear of hate crime among LGBT persons, and the serious and violent nature of these attacks (Kena & Thompson, 2021). Additionally, potentially relevant measures which may influence fear of hate crime such as state, region, or degree of urbanicity were not considered within the study. While previous works have shown that hate crimes vary across urban and rural contexts in terms of nature and scope (Gladfelter et al., 2017; Holder et al., 2022), examination of whether these factors influenced fear of hate crime could not be undertaken in the present analysis as they were not captured in the survey. Future works should build upon the study by considering whether region and urbanicity influence fear of hate crime, and the extent to which fear of sexual assault predicts fear of hate crime across regions and community types.

Finally, the data were drawn from Amazon's MTurk. While MTurk has demonstrated its utility in examining emerging research questions and understudied populations relating to fear of crime (Graham et al., 2021; Maher & Hayes, 2022; 2023), research has called into question the generalizability of findings from online, opt-in samples (Thompson & Pickett, 2020). Given this, the findings should be interpreted with caution, until subsequent works can determine the robustness and generalizability of findings reported here (Pridemore et al., 2018), particularly with community-based samples.

## **Conclusion**

The current study examines whether the shadow of sexual assault hypothesis by Ferraro (1996) is supported among persons ostensibly falling outside the scope of the theory at the time of its inception: gender and sexual minorities. Findings employing data from an online survey indicated that fear of sexual assault predicted fear of specific forms of hate crimes among LGBT folks more generally, as well as among persons within LGBT subgroups. The findings lend credence to this theoretical extension of the shadow of sexual assault hypothesis to transgender individuals and bisexual persons. This indicates the potential utility of this theory in explaining fear of crime among other vulnerable subpopulations where monosexism and double marginalization may evoke greater feelings of fear (Jourian, 2015; Whiting et al., 2012).

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## Notes

1. While we acknowledge that the sexual minority community includes other identities beyond those listed here, we frame discussion of this community to reflect the nature of the data employed within the analysis.
2. Several attention checks suggested by Pyo and Maxfield (2021) were included throughout the survey to enhance data quality. We employed multiple unobtrusive attention-check measures tailored to study measures. For instance, we assessed (in)consistency in responses to certain demographic items that were measured at the beginning and end of survey. Additionally, following the National Crime Victimization Survey's data falsification approach (NCVS, 2021), respondents answering "yes" to all possible hate crime victimizations, an unlikely scenario, were identified as inattentive participants.
3. Although non-binary and asexual individuals could have been included in the global LGBT measure, we excluded them to conduct the comparison of different multivariate models through a series of likelihood-ratio tests using the same sample. As a sensitivity analysis, we fitted the same logistic regression models using a global measure of LGBTQ+ that incorporates non-binary and asexual individuals within the "queer" category. A consistent pattern in relation to the fear of hate crimes was observed.
4. Among 135 transgender individuals, the majority (72.6%) identified as a sexual minority (24.4% gay, 10.4% lesbian, and 37.8% bisexual), while 27.4% identified as heterosexual.
5. The respondent selected all the options that applied to their race/ethnicity. There was no significant difference in the distribution of race/ethnicity between LGBT and non-LGBT individuals ( $\chi^2$  (1,  $N=1804$ ) = 3.44,  $p = .064$ ).

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