Geographic and Individual Differences in Healthcare Access for U.S. Transgender Adults: A Multilevel Analysis

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Abstract

Purpose: To identify geographic and individual-level factors associated with healthcare access among transgender people in the United States.

Methods: Multilevel analyses were conducted to investigate lifetime healthcare refusal using national data from 5831 U.S. transgender adults. Hierarchical generalized linear models examined associations between individual (age, gender, race, income, insurance, and healthcare avoidance) and state-level factors (percent voting Republican, percent same-sex couple households, income inequality, and transgender protective laws) and lifetime refusal of care.

Results: Results show that individual-level factors (being older; trans feminine; Native American, multi-racial, or other racial/ethnic minority; having low income; and avoiding care due to discrimination) are positively associated with care refusal (all P -values <0.05). Adjusting for individual-level factors, variation was observed across U.S. states, with a greater proportion of states in the Southern and Western United States with transgender residents at increased odds of experiencing care refusal, relative to other regions of the United States. When adjusting for state-level factors, the percentage of the state population voting Republican was positively associated with care refusal among the transgender adults sampled ($P < 0.01$).

Conclusion: Transgender adults surveyed reported differential access to healthcare by geographic region. Identifying geographic and individual-level factors associated with healthcare barriers allows for the development of targeted educational and policy interventions to improve healthcare access for transgender people most in need of services.

Keywords: access to care, healthcare, transgender

Introduction

TRANSGENDER PEOPLE, who have a gender identity or expression that differs from their assigned birth sex, comprise ~0.6% of the U.S. adult population.¹ Due to having a gender expression or identity that does not conform to the socially and culturally sanctioned gender norms and roles associated with their assigned sex at birth, transgender people experience multiple forms of stigma, including at the structural (i.e., laws, policies, and community attitudes) and interpersonal (i.e., harassment and abuse) levels.² These

multiple forms of stigma limit transgender individuals' access to essential resources, including employment, income, and healthcare.² Transgender stigma in healthcare may include overt and enacted forms of discrimination, such as refusal of healthcare, as well as more subtle forms of stigma such as the use of nongender affirming language and/or lack of knowledge of transgender health issues.² As a result of the stigma faced in healthcare encounters, some transgender people travel long distances to receive medically and culturally competent healthcare services, some receive needed healthcare from nonmedical sources such as friends and

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“street” vendors, and others may avoid seeking healthcare altogether.²

Avoidance of healthcare due to mistreatment from healthcare providers and staff is common among transgender people and can carry serious health consequences.² A 2013 survey of 452 transgender people in Massachusetts found that 24% of participants had experienced verbal or physical mistreatment in a healthcare setting in the past 12 months.³ Among this sample, mistreatment was significantly associated with avoidance of necessary medical care when sick or injured, as well as routine preventive care. The relationship between mistreatment and healthcare avoidance among transgender people has been confirmed by previous studies^{4,5} and literature supports a rejection sensitivity model in which stigmatized individuals nervously anticipate (hypervigilance), routinely observe (perceived stigma), and ultimately, anxiously react to rejection (e.g., healthcare avoidance).⁶ While healthcare avoidance may be initially protective against the psychological distress associated with stigmatizing healthcare encounters, avoiding healthcare can have serious adverse health consequences, including delaying care to the point that one experiences a medical emergency.³

Affordability of care and access to insurance coverage can further limit access to healthcare for transgender people. Many transgender individuals lack health insurance, which may be due, in part, to higher prevalence of unemployment and poverty in this population relative to the general population—a likely product of employment discrimination.^{7,8} Transgender women, transgender people of color, and aging transgender adults may be particularly vulnerable to employment discrimination given their multiple stigmatized identities.^{9–15} For transgender people who are insured, barriers to care can persist as private insurers have historically excluded coverage for medical interventions related to gender transition, claiming that these procedures are “cosmetic” or “medically unnecessary.”¹¹

Insurers also have a history of denying claims for routine preventive services, such as prostate or cervical cancer screenings for transgender patients whose gender identification does not “match” their bodies.¹⁶ While the passage of the Affordable Care Act (ACA) makes it illegal for insurance companies to deny individuals on the basis of preexisting conditions and gender identity,¹⁷ the limited availability of transgender-competent providers,^{18–20} and the still limited coverage for many gender affirming surgeries,^{21,22} may force some transgender people to pay out-of-pocket for a provider outside their plan, leading to high healthcare expenditures even for the insured.^{23,24} Due to the many challenges surrounding affordability and access to healthcare for transgender people, along with the disproportionate prevalence of poverty and unemployment in this population, inadequate insurance coverage and lack of financial resources remain primary barriers to accessing healthcare among transgender people.

Barriers to healthcare have been reported among transgender people across the United States,^{25,26} but some areas of the country may face greater access to care challenges. At the time the National Transgender Discrimination Survey (NTDS) was conducted in 2008, only 11 states (Hawaii, Illinois, Indiana, Maine, Montana, New Jersey, New Mexico, Oregon, Rhode Island, Vermont, and Washington) and the District of Columbia had policies providing protections against gender identity-based discrimination in public ac-

commodations, including healthcare settings.^{27,28} While the number of states adopting transgender protections in healthcare and other public accommodation locations increased to 18 plus the District of Columbia, such policies remain absent in Southern U.S. states.²⁹ In addition to failing to adopt transgender protective legislation, several Southern states (i.e., Arkansas, North Carolina, and Tennessee) currently have policies that explicitly prevent the passage or enforcement of local nondiscrimination laws.²⁹ Southern states have also historically been slow to adopt policies that ban transgender exclusions in both private insurance and Medicaid coverage.³⁰ In fact, before the implementation of the nondiscrimination provision of the ACA,¹⁷ no Southern state had protections against transgender exclusions in insurance, compared to four states (Massachusetts, New York, Connecticut, and Rhode Island) and Washington, D.C. in the Northeast, four states in the West (Washington, California, Oregon, and Colorado), and one state in the Midwest (Illinois) with such policies.

States without transgender protective policies also tend to have a higher percentage of conservative voters.^{31,32} While prior research has linked the proportion of Republican voters at the neighborhood level to increased risk of depression among sexual minority youth,³³ no studies to date have explored whether political affiliation at the state level is associated with healthcare access among transgender individuals. Geographic disparities in legal protections for transgender people, along with disparate social climates across states, therefore call for a geographically contextualized multilevel analysis of healthcare access among transgender people in the United States.

To understand the geographic variation in access to care experiences among transgender individuals in the United States, the current study sought to [1] ascertain and depict geographic differences in healthcare refusal; and [2] statistically model potential state and individual-level factors associated with lifetime refusal of healthcare. We hypothesized that individual factors (age, gender, race, income, insurance coverage, and avoidance of care due to mistreatment) would be associated with care refusal. In addition, we hypothesized differences in care refusal according to state of residence, with participants in Southern states being at greater odds of experiencing care refusal relative to the national average given the historically conservative attitudes and policies of Southern states relative to other regions of the United States.^{31,32} Finally, we hypothesized that state-level indicators of conservative social climates (i.e., Republican voting practices and absence of transgender protective laws) would be associated with increased odds of experiencing care refusal given that conservative voting practices and structural stigma have been linked to poor health outcomes in sexual and gender minorities.^{33–36} Understanding the factors associated with care refusal can inform the development of geographically targeted interventions to increase access to care for the most vulnerable transgender people.

Methods

Sample

Data were from the NTDS, a cross-sectional survey of discrimination experiences among transgender people in the United States conducted by the National Center for

Transgender Equality and the National Gay and Lesbian Task Force from 2008 to 2009. A sample of 6450 transgender individuals completed a survey either online or on paper through a participating community organization. Eligibility criteria for NTDS participation were: being aged 18 years or older; voluntarily agreeing to complete the survey; and identifying as transgender. "Transgender" was defined broadly to include those who transition from one gender to another, as well as those who do not socially, medically, or legally transition (e.g., gender nonconforming people). Sociodemographics and the prevalence of discriminatory healthcare experiences among the full sample have been previously reported.⁸ For detailed information on the primary data source, including sampling and recruitment techniques, refer to *Injustice at Every Turn: A Report of the National Transgender Discrimination Survey*.⁸

Given the state-level focus of the current analysis, we limited the dataset to transgender adults residing in one of the 50 U.S. states or the District of Columbia ($n=6207$). A complete case analysis was conducted to include only participants who had valid response options for the variables used in the analysis, yielding a final analytic sample of 5831 individuals (94% of the U.S. state sample). The study team was granted access to the NTDS data, and the secondary analysis was reviewed and received an exemption by the Institutional Review Board at the Harvard T.H. Chan School of Public Health.

Measures

Individual-level factors

Demographics. Participants reported both their current gender identity and their sex as assigned at birth. These responses were recoded to produce two gender vector categories, trans feminine (e.g., male-to-female spectrum) and trans masculine (e.g., female-to-male spectrum). Since all participants were transgender or gender nonconforming, participants assigned male at birth were classified as trans feminine, whereas participants assigned female at birth were classified as trans masculine. These categories were applied regardless of whether a participant had transitioned, or intended to transition, from one gender to another.

Participants reported age (in years), annual income (categorically coded as <\$10K; \$10K–\$19,999; \$20K–\$49,999; \$50K–\$99,999; \$100K+), and type of insurance coverage (coded as any public or private coverage vs. no health insurance coverage). When reporting their race/ethnicity, participants were asked to check all that apply. Participants checking only a single race/ethnicity were then coded categorically as such (i.e., White [referent], Black, Latino, Asian/Pacific Islander, Native American, or other racial/ethnic minority); participants checking more than one racial/ethnic category were coded as multiracial.

Lifetime avoidance of healthcare due to mistreatment

Participants responded ("yes," "no," or "not applicable") to the following two statements: "I have postponed or not tried to get checkups or other preventive medical care because of disrespect or discrimination from doctors or other healthcare providers" and "I have postponed or not tried to get needed medical care when I was sick or injured because of disrespect or discrimination from doctors or other healthcare providers." Responses to these items were combined such that any participant reporting avoid-

ance of preventive or urgent care was coded as yes, otherwise, as no.

State-level factors

Percent of state voted Republican. Percent Republican was measured using state-level data on proportion of voters that voted for the Republican candidate in the 2008 Presidential election;³⁷ state percentage was matched to participants by their state of residence.

Income inequality. State-level income inequality was assessed using the 2008 Gini coefficient,³⁸ a value between 0 and 1, which measures the extent to which the distribution of family and household income within a given U.S. state deviates from an equal distribution. The state-level Gini coefficient was matched to each participant's state of residence.

Percent same-sex couple households. A U.S. 2010 Census measure of the percent of same-sex couple households by state was matched to participants' state of residence.³⁹

Transgender protective laws. States were coded as having transgender protective laws (yes/no) if in 2008 (start of data collection) they were one of the states that had state-level transgender-inclusive hate crime laws and/or laws prohibiting discrimination on the basis of gender identity or expression.^{28,40} The presence or absence of transgender protective laws was coded to each participant's state of residence.

Dependent variable: outcome

Lifetime refusal of healthcare. Participants were asked to respond to the following statement: "A doctor or other provider refused to treat me because I am transgender/gender nonconforming." Participants who had been refused care were coded as "yes" = 1; those who had never been refused care (including those who had and had not sought care) were coded as "no" = 0.

Data analysis

SAS 9.3 (SAS Institute Inc., Cary, NC) was used to conduct analyses. Descriptive statistics was used to analyze the frequency of individual- and state-level factors by refusal of care. A bivariate analysis of excluded cases was conducted to assess for statistical patterns by excluded cases. Because cases excluded from this analysis seemed missing at random, it was determined that subsequent analyses would produce unbiased parameter estimates, assuming no unmeasured confounding.⁴¹

Hierarchical generalized linear models were used to model the two-level structure of individuals within states in three steps. First, the unconditional model determined whether there were significant between-state differences in care refusal (model 1). Second, individual-level covariates were added, including age, gender, race, income, insurance, and care avoidance due to mistreatment (model 2). In the final model, state-level variables were added, including percent of state voting Republican, transgender protective laws, income inequality (Gini coefficient), and percent same-sex couple households (model 3). Using the random effects estimates provided in model 2, a map of the states with participants at greatest and lowest odds of experiencing care

TABLE 1. DEMOGRAPHIC CHARACTERISTICS OF A NATIONAL SAMPLE OF U.S. TRANSGENDER ADULTS ($N=5831$)

	<i>Total</i>		<i>Care refusal</i>		<i>Care refusal</i>	
	<i>N = 5831</i>		<i>YES = 901</i>		<i>NO = 4930</i>	
<i>Individual level</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Age in years (range 18–89)	37.0	13.1	37.6	12.1	36.8	13.3
Race/ethnicity (N,%)	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
White	4493	77.1	632	70.1	3861	78.3
Black	226	3.9	33	3.7	193	3.9
Latino	157	2.7	21	2.3	136	2.8
Asian/Pacific Islander	120	2.1	10	1.1	110	2.2
Native American	72	1.2	22	2.4	50	1.0
Multiracial	442	7.6	107	11.9	335	6.8
Other racial/ethnic minority	321	5.5	76	8.4	245	5.0
Gender vector						
Trans masculine (FTM)	2400	41.2	335	37.2	2065	41.9
Trans feminine (MTF)	3431	58.8	566	62.8	2865	58.1
Income						
<\$10K	854	14.6	174	19.3	680	13.8
\$10K–\$19,999	1370	23.5	254	28.2	1116	22.6
\$20K–\$49,999	1636	28.1	245	27.2	1391	28.2
\$50K–\$99,999	941	16.1	112	12.4	829	16.8
\$100K+	1030	17.7	116	12.9	914	18.5
Insurance coverage						
Insured (public or private)	4721	81.0	708	78.6	4013	81.4
Uninsured	1110	19.0	193	21.4	917	18.6
Avoided care due to mistreatment						
No	4065	69.7	295	32.7	3770	76.5
Yes	1766	30.3	606	67.3	1160	23.5

Totals may not sum to 100% due to rounding.

FTM, female-to-male; MTF, male-to-female; refusal of care, lifetime.

refusal, in relation to the national average, was created.⁴² All multivariable modeling was conducted using the PROC GLIMMIX procedure in SAS 9.4 (SAS Institute Inc., Cary, NC) with a binary distribution and the logit link function for the dichotomous care refusal outcome. Continuous variables were grand mean centered and the -2 log likelihood assessed model fit where lower values represented better fit. Odds Ratios (OR) and 95% Confidence Intervals (95% CI) are presented.

Results

As shown in Table 1, the mean age of participants was 37.0 years ($SD=13.1$; Range=18–89). The majority of the sample was White (77.1%), trans feminine (58.8%), and earned less than \$50,000 a year (66.2%). A total of 81.0% of participants were insured through private or public (e.g., Medicare, Medicaid) insurance. Nearly one-third of the sample (30.3%) reported having avoided preventive or emergency care due to mistreatment and 15.5% reported having been refused healthcare in their lifetime.

As shown in Table 2, nearly three quarters of U.S. states (72.5%) did not have protective laws as of 2008. The average percent of Republican voters across states was 47.0% ($SD=11.1$). The mean percent of same-sex couple households across states was 0.54% ($SD=0.2$) and the mean Gini coefficient was 0.45 ($SD=0.02$).

Table 3 presents ORs from the three models examining the relationship between individual and state-level factors

and care refusal. In the unconditional model, 16% of participants were likely to experience care refusal nationally. Model 1 demonstrated a small amount of state-level variation ($ICC=0.01$), suggesting differences in care refusal experiences by state.

Model 2 included individual-level factors as predictors of care refusal. As age increased, the odds of experiencing care refusal also increased ($P<0.0001$). Compared to trans masculine individuals, trans feminine individuals had increased odds of reporting care refusal ($P<0.0001$). Being trans masculine was therefore protective against care refusal relative to being trans feminine ($OR=0.51$; 95% CI: 0.42–0.61; $P<0.0001$). Native American, multiracial, and other racial/

TABLE 2. STATE-LEVEL CHARACTERISTICS (50 U.S. STATES AND THE DISTRICT OF COLUMBIA, $N=51$)

<i>State level</i>	<i>Mean</i>	<i>SD</i>
Percent of state voted Republican	47.0	11.1
Income inequality (Gini coefficient)	0.45	0.02
Percent same-sex couple households	0.54	0.2
Transgender protective laws	<i>N</i>	<i>%</i>
Yes	14	27.5
No	37	72.5

State-level variables based on 2008 data, except for percent of same-sex couple households, which is based on 2010 Census data.

TABLE 3. ASSOCIATIONS BETWEEN INDIVIDUAL AND STATE-LEVEL FACTORS AND LIFETIME REFUSAL OF CARE AMONG TRANSGENDER ADULTS, UNITED STATES, 2008–2009 (N=5831)

	<i>Lifetime refusal of care, N=901</i>											
	<i>Model 1</i>				<i>Model 2</i>				<i>Model 3</i>			
	<i>OR</i>	<i>95% CI</i>		<i>P</i>	<i>OR</i>	<i>95% CI</i>		<i>P</i>	<i>OR</i>	<i>95% CI</i>		<i>P</i>
Individual level												
Intercept	0.18	0.17	0.20	<0.0001	0.07	0.05	0.09	<0.0001	0.07	0.05	0.09	<0.0001
Age in years	—	—	—	—	1.01	1.01	1.02	<0.0001	1.01	1.01	1.02	0.0001
Gender vector												
Trans masculine (FTM)	—	—	—	—	1.00	—	—	—	1.00	—	—	—
Trans feminine (MTF)	—	—	—	—	1.99	1.65	2.39	<0.0001	1.98	1.64	2.38	<0.0001
Race/ethnicity												
White	—	—	—	—	1.00	—	—	—	1.00	—	—	—
Black	—	—	—	—	1.00	0.65	1.54	0.99	0.98	0.64	1.51	0.93
Latino	—	—	—	—	0.81	0.48	1.37	0.43	0.83	0.49	1.39	0.47
Asian/Pacific Islander	—	—	—	—	0.63	0.31	1.26	0.19	0.64	0.32	1.28	0.21
Native American	—	—	—	—	1.93	1.06	3.52	0.03	1.84	1.00	3.35	0.048
Multiracial	—	—	—	—	1.50	1.15	1.96	0.003	1.49	1.14	1.95	0.003
Other racial/ethnic minority	—	—	—	—	1.62	1.19	2.21	0.002	1.58	1.16	2.15	0.004
Income												
<\$10K	—	—	—	—	1.00	—	—	—	1.00	—	—	—
\$10K–\$19,999	—	—	—	—	0.89	0.70	1.14	0.36	0.89	0.70	1.14	0.37
\$20K–\$49,999	—	—	—	—	0.74	0.58	0.95	0.02	0.74	0.58	0.95	0.02
\$50K–\$99,999	—	—	—	—	0.59	0.44	0.80	0.001	0.60	0.45	0.81	0.001
\$100K+	—	—	—	—	0.57	0.42	0.76	0.0002	0.56	0.41	0.75	0.0001
Insurance												
Insured (public or private)	—	—	—	—	1.00	—	—	—	1.00	—	—	—
Uninsured	—	—	—	—	0.89	0.73	1.09	0.27	0.88	0.71	1.08	0.21
Avoided care due to mistreatment												
No	—	—	—	—	1.00	—	—	—	1.00	—	—	—
Yes	—	—	—	—	7.81	6.58	9.28	<0.0001	7.84	6.60	9.31	<0.0001
State level												
Percent voted Republican	—	—	—	—	—	—	—	—	5.92	1.52	23.07	0.01
Income inequality (Gini Coefficient)	—	—	—	—	—	—	—	—	0.45	0.00	81.58	0.76
Percent same-sex couple households	—	—	—	—	—	—	—	—	1.65	0.91	3.02	0.10
Transgender protective laws												
Yes	—	—	—	—	—	—	—	—	1.00	—	—	—
No	—	—	—	—	—	—	—	—	1.08	0.88	1.32	0.45

Bolded *P*-values significant at the <0.05 level.

Fit statistics (–2 log likelihood): Model 1=4071.94; Model 2=4063.31; Model 3=4059.58.

OR, odds ratios; 95% CI, 95% confidence interval.

ethnic minority participants had increased odds of experiencing care refusal relative to White participants (all $P < 0.05$). Compared to those earning less than \$10,000 a year, those earning more than \$50,000 per year had significantly decreased odds of having been refused care in their lifetime (all $P < 0.05$). Having avoided care due to mistreatment was the strongest individual-level predictor of care refusal (OR=7.81; CI=6.58–9.28; $P < 0.0001$).

As shown in Figure 1, after accounting for the influence of individual-level factors the 10 states where participants had the highest odds of experiencing care refusal were: (in order: Florida, Arizona, Tennessee, Oregon, Arkansas, Alaska, Connecticut, North Dakota, Oklahoma, and Idaho) and the 10 states where participants had the lowest odds of experiencing care refusal were: (in order: Maryland, California, Michigan, Massachusetts, North Carolina, Louisiana, Illinois, Utah, New York, and New Hampshire), relative to the national average.

Model 3 includes both individual-level and state-level factors. In this multivariable model, age, gender, race, and care avoidance remained significantly associated with increased odds of care refusal, whereas income was inversely associated with the odds of care refusal (all $P < 0.05$). After adjusting for individual-level and other state-level factors, the percent of state voting Republican was the strongest and most significant predictor of care refusal (OR=5.92; CI=1.52–23.07; $P = 0.01$).

Discussion

This secondary analysis of a large community driven study used a multilevel approach to identify geographical and individual-level factors associated with healthcare refusal among transgender individuals in the United States. Consistent with previous research documenting the association of demographic and behavioral factors with barriers to

FIG. 1. National transgender discrimination survey (2008–2009). Lifetime refusal of care ($n=5831$). Mapping of the 10 states with participants at the highest odds (“worst” states) and 10 states with participants at the lowest odds (“best” states) of experiencing care refusal in relation to the national average. U.S. regions were defined as follows: New England (CT, MA, ME, NH, RI, VT); Mid-Atlantic (DC, DE, MD, NJ, NY, PA, VA, WV); South (AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX); Mid-West (IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD, WI); and West (AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY).

healthcare among transgender individuals,^{2,3,10–13} age, gender, race, income, and healthcare avoidance were associated with care refusal at the individual level. After adjusting for individual-level factors, multilevel modeling of refusal of care experiences identified the 10 states where participants had the highest odds of reporting care refusal (in order: Florida, Arizona, Tennessee, Oregon, Arkansas, Alaska, Connecticut, North Dakota, Oklahoma, and Idaho) and the 10 states where participants had the lowest odds of experiencing care refusal (in order: Maryland, California, Michigan, Massachusetts, North Carolina, Louisiana, Illinois, Utah, New York, and New Hampshire). Findings also revealed that conservative voting practices at the state level are associated with care refusal, highlighting the importance of considering both individual and geographical factors in future interventions to improve access to care for transgender people.

Overall, 15.5% of the sample reported refusal of care in their lifetime. Consistent with our hypothesis, we found that refusal of care experiences differed across states. Adjusting for individual-level factors, random effects estimates revealed that nearly all regions in the United States had a state comprising one of the 10 highest-refusal states. However, 33.3% of Southern U.S. states (4 out of 12) and 30.8% of Western U.S. states (4 out of 13) were included in the top 10 highest-refusal states, compared to 0% of the Mid-Atlantic region (0 out of 7 states plus Washington, D.C.), 8.3% of the Midwest (1 out of 12), and 16.7% of New Eng-

land states (1 out of 6). Conversely, when examining the 10 states in which being a resident was protective against care refusal, relative to the national average, 33.3% of New England states (2 out of 6) and 25% of Mid-Atlantic states/D.C. (2 out of 8) were among the top 10, compared to only 16.7% of Southern states (2 out of 12) and Mid-Western states (2 out of 12) and 15.4% of Western states (2 out of 13). These patterns suggest that state-level factors may differentially drive care refusal across states and highlight the need for further exploration of state-level barriers to care for transgender individuals, particularly in areas of the Southern and Western regions of the United States.

The social climate of a geographic area has been shown to be associated with health-related outcomes in sexual and gender minorities.^{34–36} Consistent with prior research linking conservative voting practices to poor health outcomes,³³ the present study demonstrates that the percent of state residents voting Republican was the strongest and most significant state-level predictor of care refusal among the transgender individuals sampled. While prior research has linked neighborhood-level political party representation to depression in sexual minorities,³³ this is the first study, to our knowledge, to link state-level conservative voting practices to healthcare access among transgender individuals. Many states with a high percentage of conservative voters have been slow to enact or have consistently opposed social policies in favor of minority groups, including legislation that

protects transgender individuals.^{30,43} While structural stigma can limit access to care for transgender people,² residing in a state without transgender protective laws was not significantly associated with care refusal in the final multilevel model. This finding may be due to the fact that many of these protective policies had not been in place long enough to prevent care refusal. It is also possible that these policies were not widely enforced. Nonetheless, the fact that conservative voting behavior remained such a strong predictor of care refusal, even after controlling for transgender protective laws, income inequality, and percent of same-sex couple households, suggests that conservative voting practices are associated with social climates that place transgender individuals at high risk of experiencing care refusal.

Research demonstrates that political affiliation and voting behavior often serve as proxies for local attitudes and culture toward a range of topics from gun ownership to immigration, to religious freedoms.⁴⁴ To that end, prior research has found that Republican-identified voters are more likely to hold homophobic attitudes and fears of AIDS than Democratic-identified voters.^{45–47} Should Republican voters also be more likely to hold transphobic attitudes than Democratic voters, then transgender individuals living in states with majority conservative voters might be more likely to encounter biased providers and, therefore, also more likely to be refused care than transgender individuals living in states with majority Democratic voters. Additional research is necessary to explore the mechanisms through which state-level voting practices are associated with access to care for transgender people.

In addition to documenting refusal of care experiences among U.S. transgender adults, these findings provide useful intervention targets. Consistent with prior research demonstrating a significant association between prior mistreatment and avoidance of emergency and preventive care among transgender adults in Massachusetts,³ the current national study found that avoidance of healthcare due to the fear of mistreatment was associated with healthcare refusal, suggesting that fear of mistreatment could stem from prior experiences of mistreatment. Given previous research showing that stigmatized individuals (e.g., those who have been refused care) nervously anticipate, routinely observe, and anxiously react to rejection⁶ (e.g., avoid healthcare), intervention strategies are needed to address cognitive, affective, and behavioral responses to stigma among transgender people.

Coping strategies that help transgender people manage their fear of mistreatment and develop problem-focused methods to combat stigma, may help transgender people obtain needed healthcare.⁴⁸ Furthermore, these findings reveal that transgender people living in conservative states may be particularly vulnerable to stigma-driven healthcare barriers; thus, contextually sensitive structural (e.g., laws and policies) and interpersonal (e.g., provider education) interventions should be developed to improve access to care among transgender communities most vulnerable to care avoidance.

A number of demographic factors were also associated with healthcare refusal. In multivariable analyses, having a higher income (\$50,000 a year or more) was associated with reduced odds of having ever been refused care (relative to <\$10,000 a year); however, insurance coverage was not significant in the individual and multilevel models. Findings suggest that when age, race, gender, past avoidance of care,

and state-level factors are controlled for, income is a stronger predictor of care refusal than insurance coverage for transgender individuals in this national sample. One possible explanation for this finding is that transgender individuals who possess financial resources may also be able to travel to receive appropriate healthcare services, thus ensuring less care refusal. Research also finds that transgender people who demonstrate an ability to pay are treated better in healthcare encounters than individuals who cannot afford to pay for services,^{14,24} thus the heightened prevalence of care refusal among people with low incomes may be related to income-related bias. Individuals with higher incomes may also be better able to pay out-of-pocket for services not covered by health insurance. While recent federal policy changes prevent both private and public insurers from discriminating on the basis of transgender identity,¹⁷ increasing access to insurance coverage for transgender people, as of 2016, many gender affirmation surgeries are not routinely covered by private or public insurance. Therefore, even in the wake of such policy changes, having a higher income is still likely to be an asset for transgender individuals accessing services not covered by insurance. Additional mixed method research is needed to understand the various mechanisms explaining the high proportion of care refusal reported by transgender individuals across the United States.

Age, race, and gender were also associated with care refusal in both the individual and multilevel models. Not surprisingly, age was associated with increased odds of care refusal, which is likely a function of older people having had more opportunities to experience healthcare refusal as they age than younger people. Age-related stigma may also play a role in access to care for aging transgender individuals and should be explored.

In exploring care refusal by gender, trans feminine people had nearly twofold higher odds of being refused care than trans masculine people. Interestingly, however, the proportion of trans masculine participants reporting healthcare avoidance was significantly higher relative to the proportion of trans feminine individuals. It may be that trans feminine individuals experience more frequent or overt acts of discrimination compared to their trans masculine counterparts given that society values masculinity over femininity.^{9,49} It may also be that coping strategies (e.g., behavioral avoidance) utilized by trans feminine and trans masculine people differ. The differential efficacy of masculinizing compared to feminizing hormones also allows some trans masculine people to conceal their transgender status (i.e., “pass” as cisgender) more easily than some trans feminine people,^{49–51} thus providing them with the potential to not disclose their transgender status to a provider and avoiding care refusal on the basis of their transgender status.

Significant differences were found by race/ethnicity such that those identifying as Native American, multiracial, or other racial/ethnic minority were at increased odds of care refusal, relative to White participants. While much of the research on race-related barriers to care has focused on Black and Latino transgender individuals, or people of color as a homogeneous group,^{10,14,52,53} Native Americans, those representing multiple racial/ethnic groups, and other racial minority groups may face unique challenges accessing care that warrant future exploration. Research is needed to unpack these age, gender, and racial differences in

healthcare refusal, particularly alongside healthcare avoidance behaviors.

Limitations

These findings should be interpreted alongside several limitations. This study utilized a cross-sectional design precluding causal inference. Next, the current analysis only assessed indicators of care refusal at the individual and state level and did not assess provider-level factors such as provider bias or training in transgender health—both of which have been shown to influence access to care for transgender people.^{2,54,55} Future research should assess provider-level bias and training by geographic region to develop geographically targeted educational interventions to improve access to quality care for transgender people.

Research shows that depression and anxiety can influence the reporting of discriminatory experiences.⁵⁶ Given that the parent study did not collect data on mental health outcomes, we were unable to control for mental health confounders in the present analysis. However, the state-level indicators were objectively measured and, thus, not confounded by same-source reporting biases.

The analysis was unable to capture variation in a state's social climate over time. This limitation may help to explain why North Carolina, a state well-known for its 2016 implementation of a law that explicitly excludes transgender people from legal protections, was among the 10 states where being a resident was most protective against care refusal in 2008. While legal protections may change over time, research suggests that state-level voting behavior, the strongest state-level predictor of care refusal in the present sample, is relatively stable.⁵⁷ In addition, access to care barriers were assessed based on participants' lifetime experiences, thus participants may not have experienced care barriers in the current state where they reside. Nonetheless, given that past experiences of enacted stigma predict future healthcare interactions, understanding where people with access to care barriers live may help identify geographical pockets of transgender people in need of intervention.

While some areas of the United States have become more conservative (e.g., North Carolina) since the data were collected in 2009, the continued enactment of transgender protective laws suggests an increasingly more accepting social climate in many regions of the United States, which may translate into fewer experiences of care refusal for transgender people residing in these areas today (relative to 2009). The second phase of the U.S. NTDS (i.e., "U.S. Transgender Survey") will be available in late 2016.⁵⁸ Comparisons of the phase 1 and phase 2 data will allow researchers to identify whether healthcare refusal experiences persist in specific geographic regions and according to state-level social climate indicators and other key factors such as age, gender, race, income, insurance coverage, and health status.

Despite the limitations, these results have important implications for researchers, healthcare providers, policymakers, and others working to ensure the health of transgender populations. Future research should simultaneously and interactively examine the mechanisms through which voting behavior is associated with access to care among transgender individuals. Such research will permit examination of the pathways that mediate the relationship between conservative

social climates and care refusal for the transgender population and the investigation of moderators that may help to identify subgroups at greatest risk for care refusal (e.g., by age, race/ethnicity, and poverty) or protective factors that can be levied as future modifiable intervention targets (e.g., access to employment and higher wages, insurance coverage). The development and testing of effective interventions to reduce both care refusal and avoidance of care among transgender individuals is also needed. Potential intervention efforts include assessing providers' transgender cultural and medical competency by region, developing rigorously evaluated provider education programs, and ensuring that transgender health content is universally incorporated into medical school and clinical training curricula, particularly in areas where transphobic attitudes are present and training is lacking; tracking of national healthcare service utilization and quality of care; conducting health outreach to transgender people in conservative states to rebuild trust in healthcare systems; expanding insurance coverage for gender affirming medical care for transgender people; and continuing to pass and enforce supportive legal policies that ensure healthcare access for transgender people across the United States. Together these efforts will help to ensure access to affordable and culturally competent healthcare to safeguard the health of transgender people across the United States.

Conclusion

In sum, our results contribute to a growing body of evidence documenting multilevel factors associated with the health of transgender people.^{4,5,9,25,36,51,54,59,60} Our findings uniquely demonstrate that, in addition to individual-level demographic and behavioral factors, the social climate of a state as measured through partisan voting practices is a strong indicator of experiencing care refusal among U.S. transgender individuals. By identifying areas where access to care barriers exist, these findings pave the way for the development of targeted public health research, programming, and intervention efforts aimed at achieving transgender health equity.

Acknowledgments

J.M.W.H. is supported by award numbers T32MH020031 and P30MH062294 from the National Institute of Mental Health.

Disclaimer

The National Center for Transgender Equality and the National Gay and Lesbian Task Force are the organizations responsible for primary data collection. Individual-level factors and the frequency of care avoidance and refusal experiences have been previously reported.⁸

Author Disclosure Statement

No competing financial interests exist.

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