Structural transphobia is associated with psychological distress and suicidality in a large national sample of transgender adults

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Abstract

Purpose Transgender adults face increasingly discriminatory laws/policies and prejudicial attitudes in many regions of the United States (US), yet research has neither quantified state-level transphobia using indicators of both, nor considered their collective association with transgender adults' psychological wellbeing, hindering the identification of this potential social determinant of transgender mental health inequity.

Methods We therefore used factor analysis to develop a more comprehensive structural transphobia measure encompassing 29 indicators of transphobic laws/policies and attitudes at the state level, which we linked to individual-level mental health data from a large national sample of 27,279 transgender adults (ages 18–100) residing in 45 US states and the District of Columbia (DC).

Results Controlling for individual- (i.e., demographics), interpersonal- (i.e., perceived discrimination), and state- (i.e., income inequality, religiosity) level covariates, transgender adults from US states with higher (vs. lower) levels of structural transphobia reported more severe past-month psychological distress and were more likely to endorse past-year and lifetime suicidal thoughts, plans, and attempts.

Conclusion Findings provide novel evidence that state-level transphobic laws/policies and attitudes collectively shape a range of important mental health outcomes among transgender adults in the US. Multilevel intervention strategies, such as affirming mental health treatments, provider-training interventions, and supportive legislation, are needed to address structural transphobia's multifaceted nature and negative mental health consequences.

Keywords Transgender adults · Structural transphobia · Mental health equity · Stigma · Suicidality · Psychological distress

Introduction

Transgender adults (whose gender differs from their birth-assigned sex) face considerable mental health adversity. Compared to cisgender adults (whose gender matches their birth-assigned sex), they experience higher risk for psychological distress, psychiatric disorders, and suicidality [1–7]. Strikingly, upwards of 40% of transgender adults in the United States (US) report a lifetime suicide attempt [8,

9]. Thus, identifying and addressing the potential drivers of these inequities—including those at the structural level, such as transphobic state laws/policies and attitudes—represents an urgent public health priority [10]. This need is especially pressing given the dramatic rise of transphobic laws/policies (e.g., restricting access to gender-affirming care, such as hormone therapy) in many US states [11–19].

To date, transgender adults' mental health inequities have largely been attributed to their experiences of minority stress at the individual level [20, 21]. In particular, interpersonal (e.g., discrimination enacted in social interactions) and internalized (e.g., feeling ashamed of one's transgender identity) forms of transphobia are believed to shape cognitive, behavioral, and affective processes underlying transgender individuals' risk for various mental health disorders [2, 22–25]. Increasingly, research has taken a socio-ecological approach to minority stress exposure—seeking to demonstrate that transgender adults' wellbeing is also associated with features

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of the broader social context in which they live. Specifically, studies have begun to examine associations between transgender adults' mental and physical health and the extent to which they are exposed to *structural transphobia*, which we define as restrictive laws/policies (e.g., permitting discrimination based on gender identity) and/or prejudicial attitudes specific to transgender populations at the geographic (e.g., state, country) level [3, 26–32].

This conceptualization of structural transphobia builds on theory and scholarship on structural stigma, which has its roots in the robustly developed literature on structural racism [33–35]. Structural stigma is defined as "societal-level conditions, cultural norms, and institutional policies that constrain the opportunities, resources, and wellbeing of the stigmatized" [36]. Various dimensions of structural stigma—whether in the form of discriminatory laws/policies, prejudicial individual attitudes aggregated to the geographic level, or both—have been identified as key determinants of mental and physical health inequities across multiple stigmatized groups [35], including women [37], people of Color [38, 39], and sexual minorities (e.g., lesbian, gay, and bisexual people) [40]. This research underscores the importance of developing structural stigma measures that encompass both societal attitudes (e.g., cultural sexism) and laws/policies [41]. Such composite measures recognize that stigmatized individuals navigate sociopolitical contexts in which structural stigma manifests in the form of both discriminatory laws/policies and prejudicial attitudes at the state or other geographic levels [42–44].

Despite the relevance of this research to transgender people in the US, scholars have yet to quantify structural transphobia across US states using this combined measurement approach. Instead, research examining structural transphobia in the US has relied exclusively on measures of transphobic laws/policies (e.g., permitting insurance companies to deny coverage for gender-affirming care). This scholarship reveals higher incidences of mood disorders, suicidal ideation and attempts, and other correlates of psychological distress among transgender adults in US states with more (vs. less) transphobic laws/policies [13, 26, 27, 29, 30, 45]. Notably, a recent study in Europe—which measured structural transphobia by combining indicators of transphobic laws/policies and attitudes at the country level—found that transgender adults living in European countries with higher (vs. lower) levels of structural transphobia reported lower life satisfaction [3]. This finding underscores the need for more comprehensive structural transphobia measures in the US, as it is possible that existing measures comprising only transphobic laws/policies do not fully capture transgender adults' experiences of structural stigma. Existing state-level transphobia measures have additional limitations. For example, they often comprise a limited range of state laws/policies and are frequently studied in connection with mental

health data from relatively small samples of transgender adults living in US states with limited variability in structural transphobia exposure [3, 41, 46]. Moreover, scholars have rarely made efforts to provide evidence of the construct validity of these measures. These shortcomings may obscure potentially meaningful associations between structural transphobia and mental health, hindering the identification of US states where transgender adults' mental health needs are greatest.

To remedy these gaps, we developed the first measure of structural transphobia encompassing transphobic laws/policies and attitudes across US states. Though defining and demonstrating construct validity for structural stigma measures has been a longstanding challenge, researchers have begun establishing promising methods to address this need [47]. Using recommended practices for establishing construct validity [48], we created our measure and examined its validity in three phases: (1) the substantive phase involved reviewing relevant literature to define the scope of our measure (see above); (2) the structural phase included quantitative analyses, including factor analysis; and (3) the external phase involved examining the measure's association with theoretically related constructs (e.g., psychological distress). We linked this measure to mental health data from United States Transgender Survey (USTS)—the largest national survey of transgender adults to date. This dataset afforded us considerable sample size and variability in state-level transphobia. Consistent with prior research on structural stigma among transgender and other stigmatized populations [3, 26, 27, 29, 30, 35, 39], we hypothesized that transgender adults living in US states with higher (vs. lower) levels of structural transphobia would report greater psychological distress and be more likely to endorse past-month and lifetime suicidal thoughts, plans, and attempts.

Methods

Study design and data sources

We used mental health data from transgender adult respondents to the 2015 USTS, which was administered online from August 19 to September 21, 2015 by the National Center for Transgender Equality [49]. Respondents were recruited via community-based outreach. Using participants' state identifiers, we linked their self-reported mental health data to an objective measure of state-level transphobic laws/policies and attitudes obtained from public sources, including the Movement Advancement Project (MAP) [50] and Project Implicit [51]. The original USTS study was approved by the University of California, Los Angeles Institutional Review Board (IRB), and the present study was reviewed and deemed exempt by the Boston College IRB.

Study population

USTS data were collected from 27,715 transgender adult respondents living in all 50 states of the US, its territories, and the District of Columbia (DC). The USTS methodology report includes recruitment details and notes that response rates could not be calculated due to difficulties obtaining this information from community partners [49].

Exposure

To objectively quantify structural transphobia across US states using best practices for enhancing construct validity in structural stigma measurement (i.e., the structural phase) [47], we created a composite measure by factor analyzing multiple state-level indicators of transphobic laws/policies and attitudes. A factor-analytic approach was chosen to provide evidence of the structural construct validity of our measure and to minimize measurement error.

Laws/policies

We considered state-level law/policy indicators from the MAP index of 32 laws/policies protecting or restricting transgender rights [50]. For each US state, the MAP scores individual laws/policies "1" if supportive, "0" if absent, and "− 1" if restrictive (with fractional values assigned to laws/policies applying to only a portion of a state's population). These individual law/policy scores are summed on seven domains: relationship/parental recognition, nondiscrimination, religious exemptions, transgender youth laws/policies, healthcare, criminal justice, and identity documentation (see Table S1 in the Online Resource for details). States' scores on these seven domains were included as candidate indicators in our factor analysis. We used MAP data from 2019 for two reasons: (1) domain-specific MAP scores were not available in previous years and (2) the timing coincided with the onset of data collection for state-level transphobic attitudes (described below). Given the rise in transphobic laws/policies between 2015 (when outcome data were collected) and 2019 (when laws/policies were measured), we examined the bivariate correlation between laws/policies in 2015 and 2019 and found them to be strongly and significantly correlated ($r = 0.90$, $p < 0.001$). We also conducted sensitivity analyses using a composite (i.e., sum score) of individual MAP law/policy scores for each state from 2015 as the primary exposure, revealing highly similar effects to our main analyses (see Table S2 in the Online Resource). These results suggest that state-level transphobia rankings were relatively stable from 2015 to 2019 (see Figure S3 in the Online Resource for a figure depicting the rankings in 2015 and 2019) which is consistent with a 2020 MAP report indicating regional stability in transphobic laws/policies over that timespan [52].

Attitudes

We also considered indicators of state-level transphobic attitudes, which we computed by aggregating individual responses to transgender-specific Project Implicit items to the state level, assessed throughout 2020 [51]. Project Implicit is a web-based platform that allows users to complete both Implicit Association Tests (IATs) and measures of explicit attitudes and stereotypes [53, 54]. Data collection for the larger Project Implicit has been ongoing since September of 1998 with millions of respondents to date, though transgender-specific items have only been administered since 2020 [51]. Data are obtained from a non-random volunteer sample of participants who find their way to the Project Implicit website through media coverage, personal recommendations, and search engine results, or who may have been instructed to visit the website by school or work. The 24 transgender-specific items probed respondents' explicit attitudes toward transgender people (e.g., "How warm or cold do you feel towards transgender people?") and support for laws/policies protecting transgender rights. Most items were assessed on a Likert-scale from 1 (*strongly agree*) to 7 (*strongly disagree*); they were re-coded when applicable so that higher scores indicated more negative attitudes (for a full list of items in our measure, see Table S1 in the Online Resource). Using respondents' state of residence, average state scores for each item were calculated and included in our factor analysis (see Table S4 in the Online Resource for sample sizes by state for attitudinal indicators). Laws/policies in 2015 and 2019 were strongly and significantly correlated with 2020 attitudes ($rs = 0.80$ and 0.83, respectively, $ps < 0.001$), providing evidence that laws/policies and attitudes were stable over time. Consistent with similar studies [54, 55], we sought to reduce measurement error by excluding states ($n = 5$) with < 50 observations on one or more indicators: Alaska, Montana, North Dakota, South Dakota, and Wyoming. To ensure that this cutoff did not bias our results, we conducted sensitivity analyses including all states (i.e., without the < 50 cutoff) and findings revealed similar effects (see Table S5 in the Online Resource).

Factor analysis

In all, 31 candidate indicators were modeled using exploratory factor analysis, with those loading > 0.60 retained. The scree plot with parallel analysis suggested a single underlying latent factor comprising 29 indicators and representing 74% of their variance (for included indicators and factor loadings, see Table S1 in the Online Resource). This single factor solution provides evidence for construct validity. As mapped in Fig. 1, model-generated, normally distributed factor scores were computed for each state (see Table S4 in the Online Resource for state-level factor scores), with
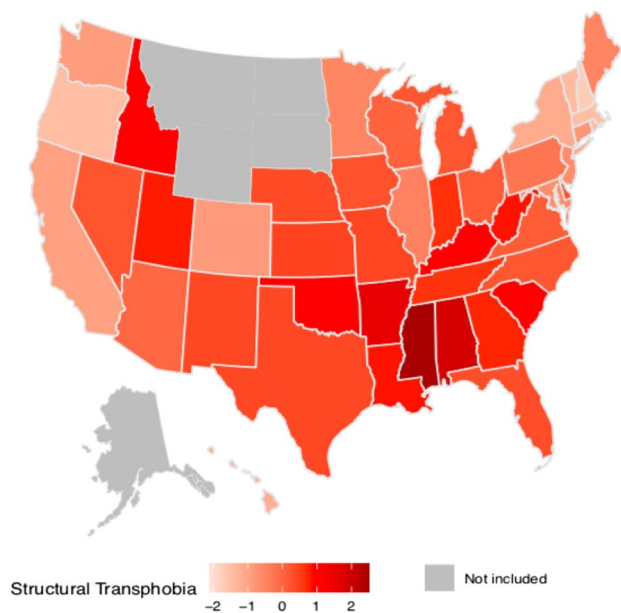
Fig. 1 Map of state-level transphobia factor scores for US states and DC. *Note:* Structural transphobia was quantified via state-level factor scores mapped in the figure. Higher factor scores, depicted in darker shades on the map, represent greater state-level transphobia

state-level transphobia being lowest in DC (− 2.12) and highest in Mississippi (2.51).

Outcomes

We examined four recent mental health outcomes: past-month psychological distress on the 6-item Kessler Psychological Distress Scale [56], past-year suicidal thoughts, past-year suicide plans, and past-year suicide attempts (prompts for these items are provided in Table S6 of the Online Resource). Three lifetime suicidality outcomes were also assessed: lifetime suicidal thoughts, lifetime suicide plans, and lifetime suicide attempts. Each suicidality outcome was modeled dichotomously (0 = no experience of suicidality, 1 = any experience of suicidality). These analyses also represented steps in the external phase of construct validation [47, 48], as the outcomes are theoretically related to the structural transphobia measure.

Covariates

At the individual level, we controlled for demographic characteristics theoretically related to our outcomes: continuous age, race/ethnicity (Alaska Native/American Indian, Asian American or Pacific Islander, Black or African American, Multiracial, Hispanic, Non-Hispanic White), relationship status (single, partnered), annual household income (none, $1–$9999, $10,000–$24,999, $25,000–$49,999,

$50,000–$99,999, $100,000 +), and education (less than high school, high school, some college, bachelor's degree or higher). At the interpersonal level, we controlled for any lifetime experience of transphobic victimization (e.g., being attacked after revealing one's transgender identity) or transphobic discrimination in public settings (e.g., being denied services based one's transgender identity)—allowing us to establish that any observed associations between structural transphobia and mental health outcomes remained when accounting for stigma exposure at the interpersonal level. Additionally, to demonstrate that these associations were not better explained by other features of the social environment, we controlled for state-level income inequality (i.e., the Gini coefficient) [57] and religiosity (i.e., the percent of Evangelical Christians and Latter-day Saints/Mormons in each state) [58]. The religiosity measure has been used as a covariate in similar structural stigma studies [59, 60], including a recent study with transgender youth [46], as past research indicates that members of these two religions endorse more negative attitudes toward transgender people and their rights compared to members of other religions [61, 62].

Statistical analysis

To test associations between our exposure and outcomes, we fit separate multivariate linear and modified Poisson regressions for psychological distress and suicidality outcomes, respectively, with state-level transphobia factor scores and study covariates specified as fixed effects. Modified Poisson regression was chosen due the high prevalence of suicidality outcomes [63, 64]. Although USTS respondents were nested within states, we did not include a random intercept for states, as intraclass correlations revealed minimal clustering (ICCs = 0.002–0.006). Analyses were conducted using R, and our reproducible code is included in the Appendix of the Online Resource. All tests were two-tailed, and the threshold for statistical significance was set at $p < 0.05$. For analyses of (binary) suicidality outcomes, estimates are reported as prevalence ratios (PRs).

Results

Of the USTS respondents ($N = 27,279$) included in our analysis, the mean age was 31.2 years (SD = 13.5). We provide additional demographic information, as well as descriptive statistics for all study variables, in Table 1.

In unadjusted models, state-level transphobia was significantly associated with all study outcomes in the hypothesized directions (see Table 2). Likewise, when accounting for individual- (i.e., demographic), interpersonal- (i.e., discrimination or victimization exposure), and state- (i.e.,

Table 1 Descriptive statistics for demographics and study variables

Age (mean, SD)	31.2 (13.5)
Relationship status (*n*, %)	
Partnered	14,179 (52.0%)
Single	13,072 (48.0%)
Race/ethnicity (*n*, %)	
Alaska Native/American Indian	312 (1.1%)
Asian American or Pacific Islander	777 (2.8%)
Multiracial	1447 (5.3%)
Black or African American	787 (2.9%)
Hispanic	1437 (5.3%)
Non-Hispanic White	22,519 (82.6%)
Income (*n*, %)	
No income	980 (3.9%)
$1–$9999	3069 (12.3%)
$10,000–$24,999	4940 (19.9%)
$25,000–$49,999	5582 (22.4%)
$50,000–$99,999	6166 (24.8%)
$100,000 or more	4161 (16.7%)
Education (*n*, %)	
Less than high school	885 (3.2%)
High school	3410 (12.5%)
Some college	12,603 (46.2%)
Bachelor's degree or higher	10,381 (38.1%)
Interpersonal stigma exposure	
1 or more experiences of transphobic discrimination or victimization (*n*, %)	5245 (20.3%)
Mental health outcomes	
Past-month psychological distress (mean, SD)	10.6 (6.0)
Any lifetime suicidal thoughts (*n*, %)	22,256 (81.7%)
Any lifetime suicide plans (*n*, %)	11,537 (42.3%)
Any lifetime suicide attempts (*n*, %)	10,700 (39.3%)
Any past-year suicidal thoughts (*n*, %)	13,227 (48.5%)
Any past-year suicide plans (*n*, %)	6583 (24.1%)
Any past-year suicide attempts (*n*, %)	2005 (7.3%)

Note: 28 respondents declined to report their relationship status, and 2381 did not report their income

income inequality, religiosity) level covariates, we found that higher (vs. lower) levels of state-level transphobia were associated with greater past-month psychological distress ($B = 0.26$; 95% CI 0.14–0.39; $p < 0.001$; see Table 2 and Fig. 2). Further, transgender adults living in states with higher (vs. lower) levels of structural transphobia were more likely to endorse past-year suicidal thoughts (PR = 1.04; 95% CI 1.02–1.07; $p < 0.001$), suicide plans (PR = 1.06; 95% CI 1.02–1.10; $p = 0.01$), and suicide attempts (PR = 1.10; 95% CI 1.02–1.19; $p = 0.02$); they, too, reported higher risk of lifetime suicidal thoughts (PR = 1.02; 95% CI 1.004–1.03; $p = 0.01$), suicide plans (PR = 1.03; 95% CI 1.003–1.06; $p = 0.03$), and suicide attempts (PR = 1.05; 95% CI 1.02–1.08; $p < 0.001$; see Table 2 and Fig. 3). Detailed

estimates for all models including covariates are available in Table S7 of the Online Resource.

Discussion

Transgender adults experience disproportionate mental health concerns relative to cisgender adults, including the highest rates of suicide attempt of any demographic group in the US [8, 9, 65, 66]. To date, these inequities have been largely attributed to stigma at the individual level, such as exposure to transphobia via interpersonal interactions and/or internalizations of these experiences [21, 23, 25]. Despite substantial evidence that structural stigma in the form of discriminatory laws/polices and prejudicial societal attitudes also shapes mental health among multiple stigmatized groups [35, 37, 39, 41, 67], as well as increasing calls to incorporate contextual factors into suicide research [68–71], scholars have rarely conceptualized or rigorously measured structural transphobia by accounting for both transphobic laws/policies and attitudes across US states. Further, research has not yet comprehensively assessed structural transphobia's associations with multiple dimensions of suicidality (e.g., thoughts, plans, attempts) and/or psychological distress among a large national sample of transgender adults. These measurement and methodological limitations have hindered efforts to identify and address structural determinants of suicidality and psychiatric morbidity among transgender adults in the US, which is particularly important in light of increasingly transphobic laws/policies and prejudicial attitudes in many US states.

Consequently, we created a measure of structural transphobia encompassing both transphobic laws/policies and attitudes at the state level, which we linked to mental health data from the largest US sample of transgender adults to date. Consistent with research examining the mental health sequelae of stigmatizing laws/policies and attitudes targeting other stigmatized groups, our study provides novel evidence that more negative state-level transphobic laws/policies and attitudes—collectively—are associated with greater psychological distress and higher rates of past-year and lifetime suicide thoughts, suicide plans, and attempts among transgender adults in the US.

Strengths and limitations

Our study has several key strengths that might inform future research. First, our measure of state-level transphobia is the first to incorporate transphobic state-level attitudes with transphobic state laws/policies, providing a novel measure of structural transphobia in the US that might be integrated into a wide array of scholarly investigations. Second, we provide evidence of substantive, structural, and external

Table 2 Estimates for psychological distress and suicidality by state-level transphobia

| Continuous outcome	B	SE	z	95% CI	p
Psychological distress (past month)					
State-level transphobia (unadjusted)	0.498	0.046	10.88	0.408, 0.587	<0.001
State-level transphobia (adjusted)	0.264	0.065	4.05	0.136, 0.391	<0.001
Bivariate outcomes (suicidality)	PR		LCI	UCI	p
Suicidal thoughts (past year)					
State-level transphobia (unadjusted)	1.072		1.056	1.088	<0.001
State-level transphobia (adjusted)	1.043		1.019	1.068	<0.001
Suicidal thoughts (lifetime)					
State-level transphobia (unadjusted)	1.021		1.014	1.029	<0.001
State-level transphobia (adjusted)	1.015		1.004	1.026	<0.05
Suicide plans (past year)					
State-level transphobia (unadjusted)	1.111		1.079	1.136	<0.001
State-level transphobia (adjusted)	1.058		1.016	1.102	<0.05
Suicide plans (lifetime)					
State-level transphobia (unadjusted)	1.047		1.029	1.065	<0.001
State-level transphobia (adjusted)	1.031		1.003	1.059	<0.05
Suicide attempts (past year)					
State-level transphobia (unadjusted)	1.166		1.109	1.227	<0.001
State-level transphobia (adjusted)	1.103		1.015	1.199	<0.05
Suicide attempts (lifetime)					
State-level transphobia (unadjusted)	1.062		1.043	1.082	<0.001
State-level transphobia (adjusted)	1.046		1.016	1.076	<0.001

SE standard error, *PR* prevalence ratio, *CI* confidence interval, *LCI* lower confidence interval, *UCI* higher confidence interval

Note: Covariates for adjusted models included age, race/ethnicity, income, education, relationship status, interpersonal stigma exposure, state-level income inequality, and state-level religiosity. For categorical covariates, reference groups were "Non-Hispanic White" for race/ethnicity, "none" for income, "less than high school" for education, "partnered" for relationship status, and "no" for interpersonal stigma exposure

construct validity for this measure through our employment of a multi-phase approach. Third, we linked this measure to mental health data from the largest available national survey of transgender adults, enhancing our study's generalizability. Fourth, results were robust to interpersonal-level (i.e., discrimination and victimization exposure) and state-level (i.e., income inequality, religiosity) covariates, suggesting that our findings remained when accounting for stigma enacted in social interactions and were not spurious to other characteristics of the social environment in which transgender adults live. Fifth and finally, findings were consistent across a range of mental health outcomes as well as across time (e.g., past-year and lifetime suicidality).

Findings should be considered in light of study limitations. First, to the best of our knowledge, no large-scale national dataset measuring transphobic attitudes, such as Project Implicit, existed prior to 2019, precluding us from aggregating transphobic attitudes to the state level more contemporaneously to the USTS. However, we provide evidence (e.g., correlations, sensitivity analyses) suggesting that relative rankings of state-level transphobic laws/

policies and attitudes changed minimally between 2015 and 2019 (see also Figure S3 in the Online Resource), partially attenuating this concern. Second, limited individual-level Project Implicit data on transphobic attitudes resulted in the exclusion of five states from our analysis. However, our sensitivity analyses inclusive of all states suggest that their exclusion did not bias our main results (see Table S5 in the Online Resource). As Project Implicit data collection is ongoing, subsequent research will be able to include an even greater range of US states. Third, data collection for the next iteration of the USTS, originally scheduled for 2020, was delayed by the COVID-19 pandemic, preventing us from accessing more recent national data on transgender adults' mental health. Analysis of these data, when available, should be used to replicate our findings. Fourth, USTS participants were recruited via community-based outreach, potentially limiting the survey's representativeness. However, we are unaware of another national dataset comparable in size and/or scope (e.g., encompassing as many mental health outcomes).
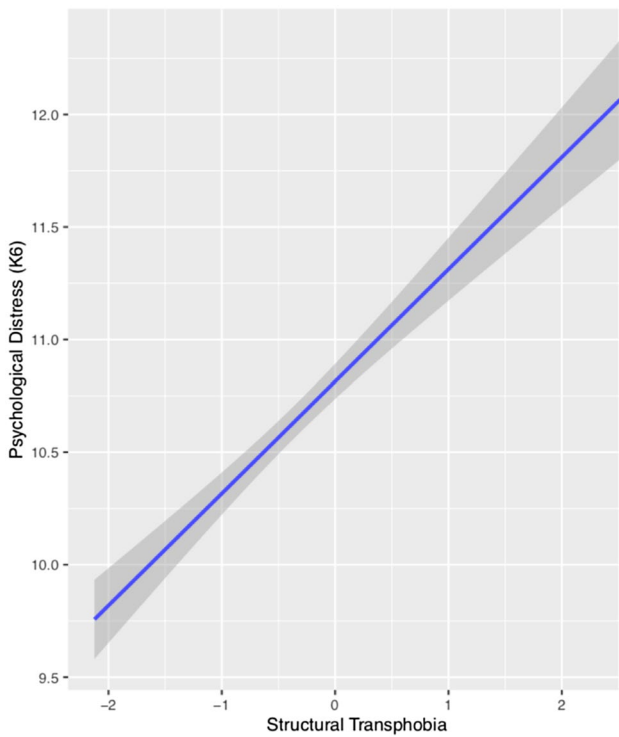
Fig. 2 Effects plot of past-month psychological distress by state-level transphobia. *Note:* Higher structural transphobia factor scores indicate greater state-level transphobia

Conclusions

Our study has important implications for intervening not only on the mental health sequelae of structural transphobia, but on transphobic laws/policies and attitudes as well. In many US states, the sociopolitical climate for transgender people is becoming increasingly hostile, with more transphobic state laws/policies enacted in 2021 and 2022 than in any other year to date [11, 72]. Our findings provide evidence that transphobic laws/policies—together with transphobic attitudes—have deleterious mental health effects for transgender people living in states where these laws/policies and attitudes are most negative. The passage of additional transphobic laws/policies in these states may result in even higher rates of psychological distress and suicidality among transgender residents. This possibility is particularly concerning considering emerging evidence that transgender individuals' access to supportive mental healthcare is substantially lower in states with higher levels of structural transphobia [46].

Critically, addressing structural transphobia and its mental health consequences requires multilevel intervention strategies, including efforts to transform transphobic laws/policies and attitudes at the state level, train mental health providers in the provision of gender-affirming care (e.g., increasing their knowledge of supportive resources, particularly for transgender adults living in highly stigmatizing contexts), and adapt existing mental health interventions to explicitly attend to structural stigma exposure [67]. For example, research demonstrates that reducing transphobic attitudes may increase individuals' support for transgender rights [73]. Accordingly, recently developed prejudice reduction interventions, which are brief and highly scalable, may represent a promising approach to facilitate changes in state laws/policies if widely deployed [74]. In turn, the implementation of supportive state laws/policies (e.g., nondiscrimination protections specific to gender identity) has been shown

Fig. 3 Prevalence ratios for past-year and lifetime suicidality by state-level transphobia. *Note:* Prevalence ratios correspond to a 1-SD increase in state-level transphobia
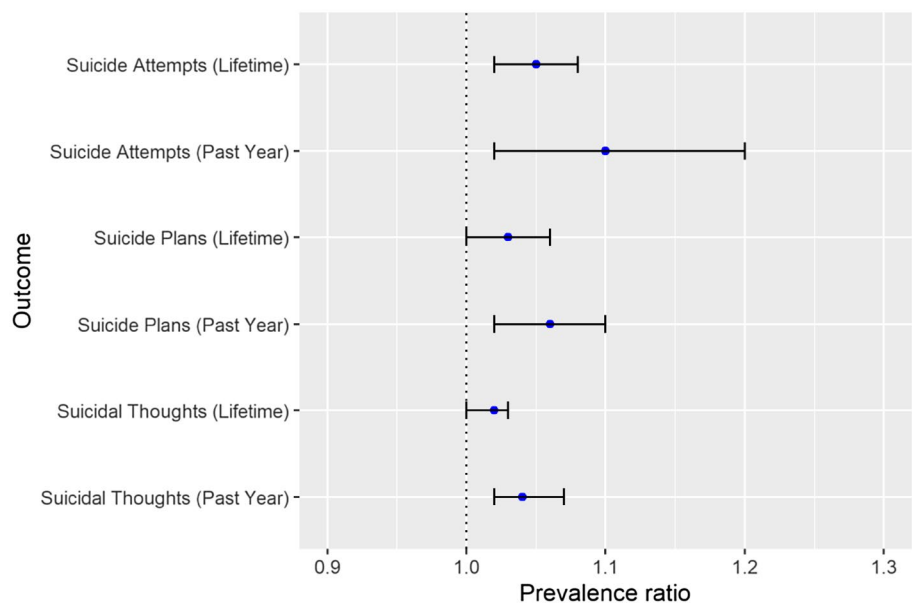
to reduce suicidality among transgender individuals [29]. Training mental health providers in gender-affirming care [75–77], and adapting psychological interventions to meet the specific needs of transgender clients [78, 79], may similarly benefit transgender individuals. Our study underscores a particularly high need for these multifaced solutions in US states with highly transphobic laws/policies and attitudes.

Declarations

Conflict of interest The authors declare no competing interests.

Ethical approval This original USTS study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the IRB at the University of California, Los Angeles. The present study was reviewed and deemed exempt by the Boston College IRB.

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