



# Immigration policies and mental health morbidity among Latinos: A state-level analysis



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## ABSTRACT

**Rationale:** Despite abundant state-level policy activity in the U.S. related to immigration, no research has examined the mental health impact of the overall policy climate for Latinos, taking into account both inclusionary and exclusionary legislation.

**Objective:** To examine associations between the state-level policy climate related to immigration and mental health outcomes among Latinos.

**Methods:** We created a multi-sectoral policy climate index that included 14 policies in four domains (immigration, race/ethnicity, language, and agricultural worker protections). We then examined the relation of this policy climate index to two mental health outcomes (days of poor mental health and psychological distress) among Latinos from 31 states in the 2012 Behavioral Risk Factor Surveillance System (BRFSS), a population-based health survey of non-institutionalized individuals aged 18 years or older.

**Results:** Individuals in states with a more exclusionary immigration policy climate had higher rates of poor mental health days than participants in states with a less exclusionary policy climate (*RR*: 1.05, 95% *CI*: 1.00, 1.10). The association between state policies and the rate of poor mental health days was significantly higher among Latinos versus non-Latinos (*RR* for interaction term: 1.03, 95% *CI*: 1.01, 1.06). Furthermore, Latinos in states with a more exclusionary policy climate had 1.14 (95% *CI*: 1.04, 1.25) times the rate of poor mental health days than Latinos in states with a less exclusionary policy climate. Results were robust to individual- and state-level confounders. Sensitivity analyses indicated that results were specific to immigration policies, and not indicators of state political climate or of residential segregation. No relationship was observed between the immigration policy index and psychological distress.

**Conclusion:** These results suggest that restrictive immigration policies may be detrimental to the mental health of Latinos in the United States.

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## 1. Introduction

There is wide agreement that strategies to address disparities in mental health should include interventions at the individual, community, and structural levels, but the majority of programs fail to address structural factors (López et al., 2012; United States Department of Health and Human Services, 2001). Despite calls for action to address Latino mental health disparities in the U.S., little headway has been made, and even less that is grounded in a

structural perspective (Guerrero et al., 2013; López et al., 2012; Schwartz et al., 2015). In part, this may reflect the challenges of intervening at the macro level to address issues such as structural forms of inequality, which can seem to be beyond the reach of interventions (Kippax et al., 2013). This paper describes an innovative approach to understanding the structural factors that shape vulnerability to mental health outcomes among Latinos, and generates knowledge that can contribute to mitigating the structural sources of that vulnerability.

Our work also advances research on policies as part of the modifiable structural determinants of health, denoted here as meso-level factors: that is, factors that lie between individual or interpersonal determinants of health and the broad macro-social

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level; that are conceptually or empirically connected to health; and that are “conceivably modifiable through sustained, strategically-organized collective action” (Hirsch, 2014, pg. 38). National, state, and local policies fit squarely in this categorization. Policies may directly limit access to health insurance, to culturally appropriate healthcare, or to any health care for certain segments of the population (Fountain and Bearman, 2011; Hagan et al., 2003; Moya and Shedlin, 2008). Policies can also cause harm indirectly, by reproducing and disseminating a language of social exclusion that generates stigma and discrimination (Hatzenbuehler, 2010; Kreitzer et al., 2014; Larchanché, 2012; Pacheco, 2013; Willen, 2012) and undermines feelings of belongingness, a core human need (Baumeister and Leary, 1995). It is for this reason that policies have been conceptualized as a core component of structural stigma (Corrigan et al., 2005, 2004; Hatzenbuehler, 2014).

A great deal of work on policy and health has focused on a ‘one policy-one outcome’ approach. This is true both in relation to work on immigrant health (e.g., citizenship requirements for Medicaid) as well as in public health more broadly (e.g., seat belt laws, cigarette taxation) (Angus and DeVoe, 2010; Chaloupka et al., 2011; Cohen and Einav, 2003; Fountain and Bearman, 2011; Santos et al., 2013; Toomey et al., 2014; White et al., 2014). An emerging body of research on public policies, however, has shown that they can be used in the aggregate to reflect a climate of social exclusion (Hardy et al., 2012; Willen, 2012). Although such aggregate measures of social policies predict adverse health outcomes among members of stigmatized groups (e.g., lesbian, gay, and bisexual (LGB) populations: Hatzenbuehler, 2011; Hatzenbuehler et al., 2009), this approach has not been explored with Latino populations. Here, we advance the work on state-level policy climates as a structural determinant of mental health for vulnerable populations by examining the association between multiple immigrant-oriented policies and Latino mental health. Moreover, an important contribution of this paper is the attention to both supportive (such as those that render foreign-born children who grew up in the U.S. eligible for in-state tuition) and exclusionary (i.e., those that restrict opportunities and resources) policies. To our knowledge, no study of immigrant-focused policy and mental health in the U.S. has examined the combined impact of both inclusionary and exclusionary policies.

### 1.1. State-level policies affecting Latino immigrants

Across the United States, state legislatures and municipal governments introduced an unprecedented 1592 bills related to immigrant and refugee health in the first half of 2011 alone, with thirty of those bills focused exclusively on immigrants’ access to health care and public benefits (Carter et al., 2011). The increase in legislative activity at the state level related to immigration in recent years invites the study of the relationship between these policies and Latino health. There is also substantial evidence already that single policies can be detrimental to Latino health across a variety of outcomes. Following passage of Senate Bill (SB) 1070 in Arizona, for example, Latinos experienced decreased mobility and were less likely to apply to services, even those for which they qualified (Hardy et al., 2012). Such policies also increase fear among immigrants and Latinos, which discourages reporting of crime (Hardy et al., 2012) and leads to delays or decreases in seeking care (Salas et al., 2013; Toomey et al., 2014).

Meanwhile, the availability and affordability of care has declined with restrictions on eligibility for health and social services under new legislation in states like Alabama (White et al., 2014). Some research has investigated the health impact of immigration-related omnibus laws (i.e., legislation that contains numerous provisions), such as Senate Bill (SB) 1070 in Arizona. SB 1070 contains numerous

restrictive policies but is most known for its provision that requires police officers to verify the immigration status of any individual they suspect to be undocumented during a lawful stop (Hardy et al., 2012; Toomey et al., 2014). The mental health impact of such policies as SB 1070 may include increased anxiety, depression, stress, and isolation (Salas et al., 2013), as well as reduced self-esteem (Santos et al., 2013).

### 1.2. Citizenship and health

Our examination of the association between policies across multiple sectors and Latino mental health also contributes to research on the intersections between citizenship and health. Work on migration and social exclusion has generally taken a binary approach to citizenship, with a substantial corpus of ethnographic research illustrating what Willen (2007) has called “the phenomenology of illegality” (Desjarlais as cited in Willen, p. 12). This work, which describes the adverse social and health consequences of the state’s designation of people as ‘illegal,’ has approached citizenship as something that one either does or does not have. Of course at the federal level that is true; either one can, or cannot, get a passport. And yet in the U.S., an undocumented immigrant who can ride the subway and rent an apartment without being asked to provide proof of legal residence faces a day-to-day existence that is much less fraught with stressors than one who must drive to work and yet cannot legally do so, and who at any moment could be stopped by law enforcement and required to provide evidence of legal status.

Our work, therefore, points to the critical importance of state-level policies as part of operationalizing and examining what Sargent and Larchanché (2015) call “the state regulative context.” In addition, our work indicates the breadth of laws and policies that might constitute this ‘spectrum of citizenship’ at the state level, indicating that it is not just laws such as Arizona SB 1070—focused explicitly on creating a hostile climate for undocumented immigrants—that create contexts of belonging or social inclusion, but rather a much broader set of laws across multiple sectors including transportation, education, labor, health and social services.

Our work also intersects with other literature on health and citizenship, which have used the notion of citizenship to denote the state’s designation of bodies or populations as more or less valuable. For example, therapeutic citizenship, as articulated by Nguyen and colleagues, describes conditions in which people’s sense of being able to make claims on the government is brought into being through the provision of specific forms of care (Nguyen et al., 2007). Similarly, some work on sexual citizenship has discussed both the denial of the right to sexual self-determination (Fields, 2008; Richardson, 2000) and the consequences, including the adverse health effects, of this denial for access to other, non-sexual, citizenship-related rights.

### 1.3. Current study

This study aims to evaluate associations between state-level policies and adverse mental health outcomes among Latinos. We focus on mental health outcomes for several reasons. Latinos report more depressive symptoms than non-Latino whites, though specific rates vary greatly by time spent in the United States and level of acculturation (Menselson et al., 2008). Further, migrants from Mexico ages 18–35 have elevated risk for depression and anxiety disorders compared to their counterparts who remained in Mexico (Breslau et al., 2011). Additionally, research suggests that common mood disorders are more vulnerable to social conditions than other psychological and physical pathologies (Ahern, Galea, Hubbard and Karpati, 2008). Finally, research on the health impact of social

policies that restrict citizenship rights for LGB populations has also shown some of the strongest relationships with mental health (for a review, see [Hatzenbuehler, 2014](#)), suggesting that similar results may be observed for immigration-related policies.

The Latinos whose mental health is assessed in the Behavioral Risk Factor Surveillance System (BRFSS), the dataset we examine here, likely includes citizens whose forebearers may have lived in what is now U.S. territory prior to the American Revolution as well as legal and undocumented immigrations. There are four reasons why this project examines the mental health impact of the immigrant-oriented state-level policy climate on Latinos despite the obvious fact that not all immigrants are Latinos, nor are all Latinos immigrants. The first reflects the limitations of using national-level data sets that measure health; while the Census asks about place of birth, most population-based health datasets do not. Thus, it is not currently possible to determine an individual's legal status in most population-based datasets, including the BRFSS.

In addition to pragmatic concerns regarding data availability, existing empirical and conceptual work on policies and Latino health provides support for this approach. Research on the health impacts of specific restrictive state immigration laws has demonstrated harmful effects on both immigrant and non-immigrant Latinos ([Jiménez-Silva et al., 2014](#); [Salas et al., 2013](#); [Toomey et al., 2014](#)). For example, focus groups in Arizona that included immigrant and non-immigrant men, women, and children demonstrated that U.S.-born children, worried about the possibility that their parents would be deported, experienced trauma and fear as they observed their parents being pulled over; those children described daily stress regarding whether their parents would come home from work ([Salas et al., 2013](#)). In addition, immigrant families regularly include individuals with a range of immigration statuses, and there is evidence that the stigma directed towards undocumented immigrants as reflected in exclusionary policies may create suffering among a broader group ([Moya and Shedlin, 2008](#); [Santos et al., 2013](#)). Finally, the conflation of Latinos, immigrants, and undocumented immigrants among the general public may also result in discrimination, enacted stigma, or even the misapplication of policies themselves directed toward Latinos who are not undocumented ([Viruell-Fuentes et al., 2012](#)).

## 2. Methods

### 2.1. Sample

Data on mental health and Latino ethnicity come from the 2012 Behavioral Risk Factor Surveillance System (BRFSS), a publicly available, cross-sectional health survey of non-institutionalized individuals aged 18 years or older. The BRFSS, which uses random-digit-dialing to landlines and cell phones, has been conducted annually at the state level since 1984. The BRFSS includes state of residence, which enables us to link the state-level variable on immigration policies to individual mental health outcomes. Additional information on the BRFSS can be found elsewhere ([Centers for Disease Control and Prevention, 2012](#)).

### 2.2. State immigration policies

We examined the state policy climate toward Latino immigrants in a sample of 31 states, which were chosen based on three criteria: (1) they exhibited significant legislative activity (a minimum of three relevant laws to maximize variability); (2) they had either a large or rapidly growing Latino population in the state (at least 9% Latino or growth in Latino population of at least 75% between 2000 and 2010 ([Ennis et al., 2011](#))); and (3) a sufficient number of Latino respondents in the state in the BRFSS dataset.

We included state-level policies related to 4 domains, including immigration, race/ethnicity, language, and agricultural worker protections. Only policies enacted through legislation were included; administrative code, executive actions, and case law were excluded. The only exceptions were when the policy was legislative in one state, but non-legislative in others, in which case the policy was counted wherever it was in place, regardless of whether it was enacted through legislation. For example, an affirmative action ban in New Hampshire came from a legislative bill, but in Georgia the law was established based on a court case, and California's ban was enacted via voter proposition; all of these were included in the index.

To generate the initial list of types of policies, we reviewed the recent legislative activity related to immigration as documented by the National Conference of State Legislatures as well as by our prior ethnographic and conceptual work on vulnerability to HIV among Mexican migrants ([Hirsch, 2003a, 2003b, 2014](#); [Hirsch and Vasquez, 2012](#)). To be as comprehensive as possible, we included any policy that related to immigration, language, or ethnicity that may differentially affect Latinos. Once the list of types of policies was established, policies were determined for each state using the databases WestLaw and LexisNexis and the websites of state governments and policy organizations, such as the National Conference of State Legislatures and the National Immigration Law Center. For the few instances in which that information could not be found from these sources, phone calls with state policy organizations or state agencies responsible for the administration of the policies (e.g., Colorado Division of Labor, New York Migrant Worker Justice Center, National Immigration Law Center) provided missing information.

Only policies enacted before December 31, 2012 were included. We counted laws as being in place even if injunctions were placed on them, barring their implementation, for part or all of 2012. Implementation of these laws was often ambiguous, and it is possible that their effects could be felt even if the law was not enforced due to a legal obstacle to implementation. The passage of the law may have had an impact in itself on immigrants by making them feel unwelcome. In order to maintain consistency and allow for the measurement of such effects, these policies were therefore included in the index.

To develop the coding scheme for these policies, we categorized similar policies across states within a certain domain. For example, state policies that allow in-state tuition for the undocumented, those with no law allowing or banning it, and those that deny in-state tuition fall under the “in-state tuition” category. We then placed each of these policy types along a continuum from the most inclusive to the most exclusive, with corresponding values (see [Table 1](#)). An independent coder used this scheme to code each of the 31 states in our sample for each policy domain. We reviewed the policies and coding scheme in conversations with policy experts at the Immigration Policy Center of the American Immigration Council and the Immigration and the States Project at Pew Charitable Trusts, who provided independent validation of the accuracy of our policy enumeration and the logic of our coding scheme.

Exploratory factor analysis of 19 policy variables resulted in one factor ( $\alpha = 0.89$ ), which included 15 of the original policy variables. Confirmatory factor analysis was conducted with the reduced set of variables, and it revealed one item with a factor loading less than 0.50; this item was dropped, leaving a 14-item scale (see [Table 1](#) for a list of the final 14 items with a description of coding scheme and the factor loadings). Means for the state policy variables ranged from 0.03 (for provider reporting and ethnic studies ban) to 1.88 for driver's licenses. Higher scores indicate greater frequency and severity of anti-immigration legislation (See [Fig. 1](#)).

**Table 1**  
Description of Latino immigration policy domains and coding scheme.

Domain	Type of policy	Description	Coding scheme	Factor loading
Mobility	Driver's licenses	Access to driver's licenses for undocumented immigrants	0 = Permit licenses for undocumented immigrants 1 = Driving privilege cards or temporary licenses marked "not valid as ID" or other marker 2 = No law permitting or prohibiting 3 = Prohibit licenses for undocumented	0.54
Labor/Employment	E-Verify	Requirements for various kinds of employers to use the federal E-Verify system to determine the employment eligibility	0 = Restrict use of E-Verify 1 = No law regarding E-Verify 2 = Require public contractors and/or public employees to use e-verify 3 = Require E-Verify for all employers	0.68
	Worker's compensation	Eligibility of agricultural workers for worker's compensation	0 = All agricultural workers entitled to worker's compensation 1 = Workers on only large farms entitled to worker's compensation 2 = No agricultural workers entitled to worker's compensation	0.46
	Minimum wage	Eligibility of agricultural workers for the state minimum wage	0 = All agricultural workers entitled to minimum wage 1 = Workers on only large farms entitled to minimum wage (above federal requirements) 2 = No additional coverage of agricultural workers for minimum wage other than federal requirements	0.54
Post-secondary education	Admissions	Ability of undocumented immigrants to attend public colleges	0 = Explicitly allow admission of undocumented students to public post-secondary educational institutions 1 = No law prohibiting or allowing admission 2 = Deny admission at public post-secondary educational institutions	0.52
	In-state tuition	Eligibility of undocumented students for in-state tuition at public colleges	0 = Allow in-state tuition to undocumented students at public educational institutions 1 = No law regarding in-state tuition for undocumented students 2 = Deny in-state tuition to undocumented students	0.67
	Financial aid	Eligibility of undocumented students for financial aid at public colleges	0 = State financial assistance available to undocumented students 1 = No law regarding financial assistance to undocumented students 2 = Deny financial assistance to undocumented students	0.61
Health	Health Coverage	Eligibility of qualified immigrants for health coverage during 5-year ban	0 = State health care coverage available to qualified immigrants during the five-year ban (not only pregnant women and children) 1 = State health care coverage available to lawfully present pregnant women and children during the five-year ban 2 = State health care coverage available to lawfully present pregnant women or children immigrants during the five-year ban 3 = No state health care coverage available to any immigrants during the five-year ban	0.81
	Culturally and Linguistically Appropriate Services (CLAS)	Requirements of health care providers to complete training in culturally and linguistically appropriate services	0 = Mandate health care provider training in culturally appropriate health care 1 = No requirement of health care provider training in culturally appropriate health care	0.70
	Food assistance	Eligibility of immigrants for food assistance during 5-year ban	0 = Food assistance available to qualified immigrants 1 = No food assistance available to qualified immigrants during 5-year ban	0.59
Other services	Cash assistance	Eligibility of immigrants for cash assistance during 5-year ban	0 = Cash assistance available to qualified and some non-qualified immigrants 1 = Cash assistance available to qualified immigrants 2 = No cash assistance available during 5-year ban	0.80
	English-only	English as the official state language	0 = English-plus legislation promotes linguistic diversity 1 = No policy related to official language 2 = English is the state's official language	0.68
Language	Omnibus legislation	Existence of an omnibus immigration law	0 = No omnibus legislation in place 1 = Omnibus legislation in place	0.54
Omnibus <sup>a</sup>	Voter ID	Requirements to show photo ID to vote	0 = No policy related to Voter ID 1 = Non-strict and/or non-photo ID required 2 = Photo identification strictly required to vote	0.61

<sup>a</sup> A variable for whether a state had omnibus legislation in place represented an indicator of an anti-immigrant environment. We only counted individual provisions of omnibus legislation if they were enacted as stand-alone legislation in other states, such as E-Verify.

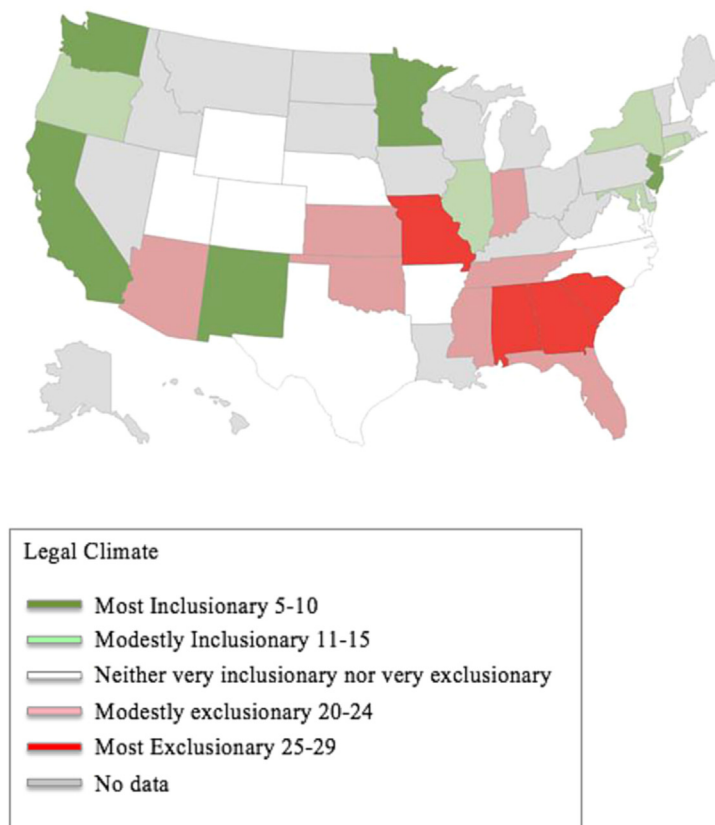
### 2.3. Mental health outcomes

Mental health was measured in two ways. First, respondents ( $N = 293,081$ ) in all 31 states were asked about their mental health in the last month (“Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?”). Response options included 0–30. The weighted mean number of days for these respondents was 3.9 ( $SE = 0.03$ ). Second, respondents ( $N = 71,051$ ) in ten of the 31 states (IL, KS, MN, MO, NE, NJ, NM, NY, OR, WA) also completed the K6 (Kessler et al., 2002), a commonly used six-item indicator of non-specific psychological distress (e.g., “During the past 30 days, about how often did you feel restless or fidgety?”). Answer choices included all = 1, most = 2, some = 3, a little = 4 or none of the time = 5. The K6 is transformed by subtracting scores from 6 and adding total scores of all six items (Kessler et al., 2002, 2003). The K6 has a sensitivity of 0.36 and a specificity of 0.96. In this sample, the K6 ranged from 0 to 24 ( $M = 3.16$ ,  $SE = 0.03$ ;  $\alpha = 0.84$ ). While the K6 is often used to screen for mental illness by creating a cut-point, the total score was used because subclinical distress is associated with negative health outcomes and, as such, should be treated as part of a continuum of distress (Colpe et al., 2010).

### 2.4. Covariates

At the individual level, we controlled for established risk factors that contribute to poor mental health, including age, race,

education, sex, income, employment and marital status. In order to reduce spurious contextual influences on our results, we also controlled for two potential state-level confounders. The first was the proportion of the state that is Latino (United States Census Bureau, 2010). The second was an index of the average level of public opinion in the state regarding immigration policies, obtained from the 2012 Cooperative Congressional Election Survey. Between late September and mid-October of 2012, the following 6 items were asked to a total sample of 54,535 participants: “Congress and the President have considered several bills to reform immigration law in the United States. What do you think the federal government should do about immigration? Select all that apply: (1) Grant legal status to all illegal immigrants who have held jobs and paid taxes for at least 3 years, and not been convicted of any felony crimes; (2) Increase the number of border patrols on the US-Mexican border; (3) Allow police to question anyone they think may be in the country illegally; (4) Fine U.S. businesses that hire illegal immigrants; (5) Prohibit illegal immigrants from using emergency hospital care and public schools; and (6) Deny automatic citizenship to American-born children of illegal immigrants.” Respondents were asked to reply to these items with Yes or No. We summed these items (reverse scoring the first item), such that higher scores indicated more negative attitudes. We then calculated the arithmetic mean value of the index for each state. Finally, in order to facilitate comparisons between states, we standardized each value to obtain standard scores ( $z$ -scores), with  $M = 0$  and  $SD = 1$  (range:  $-0.27$  to  $0.28$ ). Table 2 presents the descriptive statistics for the covariates.



Note. For ease of interpretation, quartile cut-offs were used to indicate states whose policy climates ranged from the most to least inclusionary. Analyses were run with the continuous factor score.

Fig. 1. Latino policy index.

## 2.5. Statistical analyses

We fit multi-level Poisson models to analyze the relationship between state-level immigration policies and the count of poor mental health days. Multi-level linear models were fit to analyze the relationship between immigration policies and the psychiatric distress scale. For both outcomes, models were fit with the full sample, with Latinos only, with all non-Latinos only, and with all white non-Latinos only. We also tested for effect measure modification between Latino status and state policies. Analyses were conducted in R version 3.3.1 with the package 'lme4' (Bates et al., 2015). Models incorporated random intercepts for each state, and BRFSS's complex sampling design weights to account for participants' unequal probability of selection.

We ran three sensitivity analyses to evaluate alternative explanations for study findings. Specifically, we replaced the state-level immigration policy index with two indicators of political climate in each of the 31 states: percentage of the vote for Romney vs. Obama during the 2012 Presidential election (United States Federal Election Commission, 2013) and the party affiliation of the governor in 2012 (National Governors Association, 2012). In addition, we controlled for state-level residential segregation between Latinos and non-Latinos using data from the 2012 U.S. Census (Frey, 2010); the definition and calculation of the segregation index were derived from Frey and Meyers (2005).

## 3. Results

Table 3 contains the exponentiated results of Poisson models examining the relationship between state policies and poor mental health days, in 31 states. Participants in states with a more exclusionary immigration policy climate had higher rates of poor mental health days than participants in states with a less exclusionary immigration policy climate, with a rate ratio (RR) of 1.05, 95% confidence interval (CI) 1.00 to 1.10 (Table 3, Model 1). The association between state policies and the rate of poor mental health days was significantly higher among Latinos versus non-Latinos (Table 3, Model 2: RR for interaction term: 1.03, 95% CI: 1.01, 1.06). Furthermore, Latinos in states with a more exclusionary immigration policy climate had 1.14 (95% CI: 1.04, 1.25) times the rate of poor mental health days than Latinos in states with a less exclusionary immigration policy climate (Table 3, Model 3). This relationship was attenuated among all non-Latinos (Table 3, Model 4, RR: 1.02, 95% CI: 0.97, 1.07) and among non-white Latinos (Table 3, Model 5, RR: 1.04, 95% CI: 1.00, 1.09). There was no effect measure modification between state-level policies and percent Latino in the state (results not shown but available upon request), indicating that these relationships hold for Latinos living in states with relatively high and low numbers of Latinos.

Table 4 contains the results of linear models examining the relationship between state policies and psychological distress, as measured by the K6, collected in 10 states. Exclusionary state immigration policies were not associated with psychological distress (Table 4, Model 1), and there was no effect measure modification between state policies and Latino status (Table 4, Model 2). The state policy scale was not associated with psychological distress when the sample was restricted to Latinos (Table 4, Model 3), non-Latinos (Table 4, Model 4), or white non-Latinos (Table 4, Model 5). However, the magnitude of the coefficient for the policy index was appreciably larger among Latinos ( $\beta = 0.35$ ) than among all other groups ( $\beta \leq 0.09$ ). In addition, Table 4, Model 3 shows that Latinos living in states with more negative attitudes toward immigration experienced more psychological distress than Latinos living in states with less negative attitudes toward immigration,  $\beta = 4.50$  (95% CI: 1.57, 7.44).

**Table 2**

Demographic Characteristics of Respondents in the 31 states used in the current study, 2012.

Individual level variables	Mean/(SE)
Age	46.58 (18.06)
Latino	18.11% (0.18)
Black	13.56% (0.14)
Female	51.42% (0.19)
Education	
<High School Grad	15.5% (0.17)
High School Grad	27.57% (0.17)
Attended College or Tech. School	30.74% (0.18)
Grad. College or Tech. School	26.2% (0.15)
Income	
<15,000	13.6% (0.15)
15,000 < 25,000	18.17% (0.16)
25,000 < 35,000	10.85% (0.13)
35,000 < 50,000	13.78% (0.14)
50,000+	43.6% (0.02)
Employment	
Employed	55.74% (0.19)
Out of work/unable to work	14.82% (0.14)
Homemaker/student/retired	29.44% (0.17)
Unmarried	50.31% (0.19)
<b>State Level Variables</b>	
Proportion Latino	15.3% (0.002)
Public opinion	0.06 (0.0003)
Policy scale	-0.18 (0.003)
<b>Outcome Variables</b>	
Mentally unhealthy days	3.9 (0.03)
Psychological distress	3.16 (0.03)

The sensitivity analyses revealed no statistically significant relationship between the political climate, residential segregation, and poor mental health days in the full sample or among Latinos (results available upon request). Although residential segregation was not associated with psychological distress in the full sample or among Latinos (results available upon request), living in a state that voted for Romney in 2012 was associated with slightly higher levels of psychological distress when the sample was restricted to Latinos ( $\beta = 0.08$ , 95% CI: 0.02, 0.13).

## 4. Discussion

This study examined whether Latinos residing in states with immigration policies that are, in the aggregate, more exclusionary experience worse mental health outcomes than those living in states with a less exclusionary immigration policy climate. To address this aim, we linked data on 14 state-level policies to individual-level mental health outcomes from participants in a population-based health survey. Results indicated that living in a state with a more exclusionary immigration policy climate was associated with a greater number of poor mental health days for all residents. This relationship was strongest, however, among Latinos: Latinos living in states with a more exclusionary immigration policy climate had a higher rate of poor mental health days than Latinos living in states with a less exclusionary policy climate. State immigration policies were not associated with increased psychological distress. However, there was a strong relationship between state-level public opinion toward immigration and psychological distress among Latinos, but not non-Latinos or white non-Latinos. Further, sensitivity analyses did not provide compelling alternative explanations, although living in a state that voted for Romney in 2012 was associated with psychological distress among Latinos. The K6 scale was available for only 10 states, which may have reduced our ability to detect small associations between state immigration policy and psychological distress outcomes among Latinos.

**Table 3**  
State-level immigration policies and days of poor mental health: 2012 BRFSS.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)	RR (95% CI)
Age	0.993 (0.993, 0.994)	0.993 (0.993, 0.994)	1.001 (0.999, 1.003)	0.992 (0.991, 0.992)	0.991 (0.99, 0.991)
Sex (male)	0.747 (0.735, 0.759)	0.747 (0.735, 0.759)	0.816 (0.771, 0.863)	0.742 (0.73, 0.754)	0.72 (0.706, 0.733)
Black (Black)	0.834 (0.815, 0.854)	0.835 (0.816, 0.855)			
Latino (Latino)	0.83 (0.811, 0.85)	0.844 (0.823, 0.866)			
Income					
<15K (ref)					
15k < 25k	0.874 (0.854, 0.895)	0.874 (0.854, 0.894)	0.839 (0.783, 0.9)	0.885 (0.863, 0.907)	0.864 (0.839, 0.889)
25k < 35k	0.773 (0.751, 0.797)	0.773 (0.751, 0.797)	0.696 (0.632, 0.766)	0.8 (0.775, 0.826)	0.776 (0.749, 0.805)
35k < 50k	0.715 (0.694, 0.737)	0.715 (0.694, 0.737)	0.657 (0.591, 0.729)	0.738 (0.715, 0.761)	0.704 (0.68, 0.729)
> 50K	0.596 (0.58, 0.613)	0.596 (0.58, 0.612)	0.681 (0.619, 0.75)	0.608 (0.591, 0.625)	0.574 (0.556, 0.592)
Education					
<High school (ref)					
Some College	0.869 (0.848, 0.89)	0.867 (0.847, 0.888)	0.977 (0.906, 1.053)	0.835 (0.814, 0.858)	0.832 (0.808, 0.857)
College	0.674 (0.655, 0.694)	0.673 (0.653, 0.692)	0.821 (0.736, 0.916)	0.646 (0.627, 0.666)	0.654 (0.632, 0.677)
High School	0.847 (0.827, 0.867)	0.846 (0.826, 0.866)	0.905 (0.844, 0.97)	0.82 (0.799, 0.842)	0.837 (0.813, 0.862)
Employment					
Employed (ref)					
Homemaker, student, retired	0.961 (0.94, 0.981)	0.96 (0.94, 0.981)	1.085 (1.01, 1.165)	0.955 (0.933, 0.977)	0.946 (0.923, 0.969)
No work	2.234 (2.189, 2.28)	2.233 (2.188, 2.279)	1.921 (1.797, 2.053)	2.292 (2.243, 2.343)	2.389 (2.332, 2.448)
Marriage (Married)	0.88 (0.864, 0.896)	0.88 (0.865, 0.896)	0.9 (0.848, 0.956)	0.888 (0.871, 0.904)	0.881 (0.863, 0.9)
Public Opinion	1.35 (0.995, 1.833)	1.356 (0.998, 1.843)	2.16 (1.158, 4.026)	1.181 (0.864, 1.616)	1.433 (1.067, 1.926)
State Proportion Latino	1.068 (0.837, 1.364)	1.071 (0.838, 1.37)	1.946 (1.214, 3.118)	0.998 (0.775, 1.286)	1.04 (0.82, 1.32)
Policy Scale	1.048 (1.003, 1.095)	1.044 (0.999, 1.091)	1.138 (1.038, 1.247)	1.019 (0.974, 1.066)	1.043 (1, 1.089)
Latino × Policy Scale		1.035 (1.012, 1.058)			
Constant	8.98 (8.46, 9.532)	8.988 (8.466, 9.543)	4.272 (3.677, 4.965)	9.433 (8.871, 10.03)	10.777 (10.131, 11.465)
Observations	243,996	243,996	19,861	226,664	189,650

Note. BRFSS: Behavioral Risk Factor Surveillance System. RR: Rate Ratio. CI: Confidence Interval. Models 1 and 2 include the full sample. Model 3 includes Latinos only. Model 4 includes only non-Latinos. Model 5 includes only white non-Latinos. CIs for weighted multi-level Poisson models presented here are less stable than CIs from non-hierarchical survey-weighted Poisson models, which produced similar results (available upon request).

Our work on state-level policy and Latino health differs in critical ways from the one existing study that calculated a composite index comprised of state-level immigration policies (Chin and

Hessick, 2014). That study, which used both inclusionary and exclusionary laws from 2005 to 2009, did not examine the impact of the policy climate on health (either of immigrants or Latinos),

**Table 4**  
State-level immigration policies and psychological distress: 2012 BRFSS.

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)	$\beta$ (95% CI)
Age	-0.02 (-0.02, -0.02)	-0.02 (-0.02, -0.02)	-0.005 (-0.01, 0.004)	-0.02 (-0.03, -0.02)	-0.02 (-0.02, -0.02)
Sex (male)	-0.38 (-0.43, -0.32)	-0.38 (-0.43, -0.32)	-0.67 (-0.91, -0.43)	-0.34 (-0.40, -0.28)	-0.33 (-0.39, -0.27)
Black (Black)	-0.41 (-0.50, -0.31)	-0.41 (-0.50, -0.32)			
Latino (Latino)	-0.02 (-0.12, 0.08)	-0.11 (-0.30, 0.07)			
Income					
<15K (ref)					
15k < 25k	-0.95 (-1.07, -0.84)	-0.95 (-1.07, -0.84)	-1.23 (-1.56, -0.90)	-0.81 (-0.93, -0.69)	-0.68 (-0.81, -0.54)
25k < 35k	-1.43 (-1.56, -1.30)	-1.43 (-1.55, -1.30)	-1.32 (-1.73, -0.91)	-1.38 (-1.51, -1.24)	-1.22 (-1.37, -1.08)
35k < 50k	-1.69 (-1.82, -1.57)	-1.69 (-1.82, -1.57)	-1.80 (-2.23, -1.36)	-1.63 (-1.76, -1.50)	-1.52 (-1.66, -1.38)
> 50K	-1.95 (-2.06, -1.83)	-1.94 (-2.06, -1.83)	-1.63 (-2.07, -1.19)	-1.89 (-2.00, -1.77)	-1.83 (-1.96, -1.69)
Education					
<High school (ref)					
Some College	-0.74 (-0.85, -0.64)	-0.74 (-0.85, -0.64)	-0.50 (-0.84, -0.16)	-0.85 (-0.96, -0.74)	-0.58 (-0.70, -0.46)
College	-0.87 (-0.98, -0.76)	-0.87 (-0.98, -0.76)	-1.13 (-1.57, -0.69)	-0.93 (-1.04, -0.81)	-0.62 (-0.74, -0.49)
High School	-0.67 (-0.77, -0.57)	-0.67 (-0.77, -0.57)	-0.61 (-0.91, -0.31)	-0.74 (-0.85, -0.62)	-0.45 (-0.57, -0.33)
Employment					
Employed (ref)					
Homemaker, student, retired	0.03 (-0.04, 0.11)	0.04 (-0.04, 0.11)	0.51 (0.20, 0.82)	-0.02 (-0.09, 0.05)	-0.07 (-0.15, 0.001)
No work	2.64 (2.54, 2.73)	2.64 (2.54, 2.73)	1.92 (1.58, 2.25)	2.76 (2.66, 2.86)	3.00 (2.89, 3.10)
Marriage (Married)	-0.43 (-0.49, -0.37)	-0.43 (-0.49, -0.37)	-0.76 (-1.02, -0.50)	-0.35 (-0.42, -0.29)	-0.32 (-0.38, -0.25)
Public Opinion	0.79 (-0.09, 1.67)	0.80 (-0.06, 1.67)	4.50 (1.57, 7.44)	0.16 (-0.69, 1.02)	0.12 (-0.84, 1.07)
State Proportion Latino	-0.20 (-1.03, 0.62)	-0.26 (-1.08, 0.56)	0.54 (-1.86, 2.94)	-0.16 (-1.01, 0.69)	0.14 (-0.82, 1.10)
Policy Scale	0.09 (-0.04, 0.22)	0.09 (-0.04, 0.23)	0.35 (-0.13, 0.82)	0.02 (-0.10, 0.15)	0.03 (-0.12, 0.18)
Latino × Policy Scale		-0.10 (-0.26, 0.07)			
Constant	6.51 (6.31, 6.70)	6.52 (6.32, 6.71)	5.43 (4.80, 6.05)	6.46 (6.26, 6.66)	5.99 (5.77, 6.21)
Observations	61,455	61,455	5186	56,882	50,478

Note. BRFSS: Behavioral Risk Factor Surveillance System. CI: Confidence Interval. Models 1 and 2 include the full sample. Model 3 includes Latinos only. Model 4 includes only non-Latinos. Model 5 includes only white non-Latinos.

nor did it compare the policy index to any particular outcome; instead, the authors examined the correlation between a state's policy index and the number of undocumented immigrants.

Our results are consistent with previous studies with individuals from other marginalized groups, including African Americans (Krieger et al., 2013), individuals with mental illness (Evans-Lacko et al., 2012), and sexual minorities (Hatzenbuehler, 2014; Hatzenbuehler et al., 2009; Hatzenbuehler et al., 2010), which have similarly documented the negative consequences of exposure to social policies that constrain the opportunities, resources, and wellbeing of the stigmatized. Together, this emerging literature indicates the ways in which state-sanctioned forms of stigma and discrimination shape the health of stigmatized populations, net of individual and contextual characteristics.

This study raises several questions for future research. Although our policy measure was comprehensive, it was not exhaustive. In particular, administrative codes, appropriations bills, executive actions, and case law were excluded from our index but may shape the social climate surrounding Latinos in important ways. For example, the governors of both Arizona and Nebraska issued executive orders denying driver's licenses to immigrants who would have qualified for them under Deferred Action for Child Arrivals (DACA) in 2012. Such measures may represent an exclusionary environment and perpetuate harms in instrumental ways, but to maintain consistency, we did not include them. Thus, future studies should consider incorporating these codes and laws into the measure of state climates.

In addition to expanding the list of policies and other climate-related factors, future studies should identify the specific mechanisms through which adverse social climates surrounding Latinos adversely influence their mental health. There are many reasons why exclusionary social policies might affect the mental health of Latinos. Some pathways are likely direct and concern access to material resources. For instance, in states where the undocumented cannot secure driver's licenses, a broken taillight can lead to a traffic stop, which results in deportation and the forced separation of parents and children; existing research also provides evidence that reduced mobility due to fear can create substantial delays in access to care (Hardy et al., 2012; Salas et al., 2013).

In addition to these more direct, material pathways, there are psychosocial mechanisms through which social policies that signal social exclusion may impact the mental health of stigmatized populations. Exclusionary policy climates likely invigorate interpersonal and individual mechanisms that disadvantage people in stigmatized groups (Hatzenbuehler, 2010). For instance, interpersonal discrimination (e.g., overt victimization, micro-aggressions) is more likely to be openly expressed and acted upon in a context that sanctions structural stigma (Hatzenbuehler and Link, 2014). Moreover, at the individual level, stigmatized persons living in a context with discriminatory policies may be more likely to: perceive greater discrimination (Santos et al., 2013; White et al., 2014); anticipate rejection from others based on their membership in a stigmatized group (Pachankis et al., 2014); withdraw from interactions that hold the potential for rejection (Link et al., 1989); attentively monitor interactions to assess whether the stigmatized status is affecting one's treatment by others (Pinel, 1999); and, then, induced to attend in all these ways, be led to feel that one does not "belong" in an essential way (Baumeister and Leary, 1995), which can engender internalized stigma. In turn, these stigma processes at the interpersonal and individual levels have been associated with psychological distress and depressive symptoms (Hatzenbuehler, 2009; Hatzenbuehler et al., 2013; Viruell-Fuentes et al., 2012). Thus, existing research suggests several individual- and interpersonal-level mechanisms through which residence in states with less supportive immigration-related policies could affect the

mental health of Latinos, but many of these mechanisms require empirical testing.

Future work should also take into account intersectional experiences of the policy climate; it is conceivable that LGB Latinos, for example, may experience unique mental health burdens in states with policies that deny citizenship rights related to both sexual and ethnic identity, as suggested by Epstein and Carrillo's (2014) recent discussion of 'intersectional sexual citizenship.' Finally, we focused on mental health outcomes in the current study; the extent to which immigration policies contribute to other adverse health outcomes (e.g., substance disorders, physical health morbidity) among Latinos represents an important area for future inquiry.

#### 4.1. Limitations

These findings should be considered in light of the study's limitations. First, to maximize statistical power, we chose a subset of states ( $n = 31$ ) that exhibited significant legislative activity regarding Latinos and had a large or rapidly growing Latino population in the state. Thus, these results are not generalizable to states not included in the study. Second, these data are cross-sectional; thus, although we controlled for potential confounders at the state level, it is possible that an unmeasured common factor may be responsible for the observed relationship between the policy climate and mental health outcomes among Latinos. Third, although we reviewed the policies and coding scheme in conversations with several policy experts in order to provide independent validation of the accuracy of our policy enumeration and the logic of our coding scheme, we did not have a second rater independently code each of the policies, which may have introduced measurement error. Fourth, we focused on immigration policies at the state level. However, municipalities are an important source of both inclusionary and exclusionary policies, such as citywide sanctuary laws that aim to deter immigration enforcement activity or local and regional partnerships forged with U.S. Immigration and Customs Enforcement (ICE) that aim to collaborate in enforcement activity. Because the BRFSS does not release data below the county level, we were not able to include these local policies in our index. On the other hand, the state represents a critical locus of legislative action related to immigration. State-to-state variation in the recent executive action on immigration policy, with some states moving aggressively to put procedures into place to implement those regulations while others suing to stay them (Lopez and Krogstad, 2015), suggests that the state-level climate may even play a critical role in shaping the impact of federal reforms. Finally, the BRFSS dataset does not provide information on immigration status, so we were unable to examine relationships between state policies and the mental health of Latino immigrants or undocumented residents. We argue that these laws and policies create pernicious climates for all Latinos, and this should especially be the case for undocumented immigrants. Further research is needed to test this hypothesis.

This study also had a number of methodological strengths. In particular, we used population-based data from three-fifths of the states in the U.S. and devised a robust, objective index of the social climate surrounding Latinos. Because this index did not rely on self-report perceptions of Latinos about the policy climate in their state, we minimized confounding with mental health status (e.g., individuals with depression could be more likely to perceive a negative social climate). Moreover, this approach overcame the limitations inherent in same-source bias, which can create spurious associations when the exposure and outcome are both measured via the same method (i.e., self-report). In linking our policy measure at the state level to individual-level mental health outcomes, our study is not subject to the ecological fallacy, which can occur



when inferences about the effect of ecological influences rely solely on aggregated reports of the outcome (i.e., mental health).

#### 4.2. Conclusions

As policy debates surrounding citizenship status for Latinos become more prominent in the U.S., research into the social, economic, and health effects of these policies is urgently needed. The impact of state-level policies in either buffering or exacerbating the health of Latinos becomes all the more critical as the United States looks towards a new presidency with a starkly different view about immigrants (e.g., Burns, 2015). This study provides an important contribution to our understanding of the mental health consequences of exposure to laws that marginalize and discriminate against Latinos. Although more research is clearly needed, we provide some of the first evidence to suggest that the broad policy environment surrounding Latinos may be adversely affecting the mental health of this population.

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