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Article

The association between anti-immigrant policies and perceived discrimination among Latinos in the US: A multilevel analysis

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ABSTRACT

Research has found a strong inverse association between discrimination and health and well-being. Most of these studies have been conducted among African-Americans, and have examined the relationship at the individual-level. To fill these gaps in knowledge we estimated the prevalence of perceived discrimination among a nationally representative sample of Latino adults in the US, and investigated the association between state-level anti-immigrant policies and perceived discrimination. We merged survey data with a state-level anti-immigrant policy index. First, we fit hierarchical logistic regression models to test the crude and adjusted association between anti-immigrant policies and perceived discrimination. Second, we specified cross-level interaction terms to test whether this association differed by relevant individual characteristics. Almost 70% of respondents reported discrimination (68.4%). More anti-immigrant policies were associated with higher levels of discrimination (OR=1.62, 95% CI 1.16, 2.24, p=0.01). The association between anti-immigrant policies and discrimination differed by place of origin (p=0.001) and was marginally moderated by generation status (p=0.124). Anti-immigrant policies stigmatize both foreign and US-born Latinos by creating a hostile social environment which affects their experiences of discrimination. These non-health policies can adversely affect Latino health, in part through exposure to discrimination, and may help explain health patterns among Latinos in the US.

Introduction

Discrimination is a risk factor for a wide array of health outcomes among populations ascribed a racial/ethnic "minority" status in the United States (US) (Gee, 2002). The noxious health effects of discrimination have been documented in a large body of literature primarily focused on African Americans (Williams & Mohammed, 2009; Williams, Neighbors, & Jackson, 2003). However, despite the importance of discrimination for shaping life opportunities, with few exceptions (e.g. Cook, Alegria, Lin, & Guo, 2009; Viruell-Fuentes, 2007), our understanding of the role of discrimination in explaining Latinos' patterns of health remains limited (Cook et al., 2009; Flores et al., 2008; Gee, 2002; Viruell-Fuentes, 2007). To our knowledge only one quantitative study has systematically examined the prevalence and correlates of discrimination among a nationally representative sample of Latinos (Perez, Fortuna, & Alegria, 2008). These gaps in the literature have occurred despite the fact that in 2012 Latinos constituted 17% of the total US population and are the largest racial/ethnic minority group in the country (US Census, 2014), as well as accumulating evidence that discrimination is chronic aspect of life for Latinos in the US (Flores et al., 2008; Lopez, Morin, & Taylor, 2010). Addressing these gaps requires attention to the contexts that give rise to the discrimination of Latinos. We attend to these contexts by focusing on the extent to which state-level anti-immigrant policies contribute to heightening the exposure of Latinos to discrimination.

In spite of extensive work on how racial/ethnic inequalities in health arise, less is known about the social determinants of risk factors for disease including discrimination, and how they vary across population groups. Membership in socially defined groups often dictates differential exposure to stressors such as discrimination, which

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in turn affect health (Kessler, Mickelson, & Williams, 1999; Williams & Mohammed, 2009). Variation in experiences of discrimination is also likely shaped by a group's social status, however, our understanding of how social location impacts discrimination remains limited, because discrimination is most often treated as a predictor of disease, rather than an outcome in and of itself (Perez et al., 2008). Further, while discrimination is produced and maintained at multiple levels (Gee, 2002; Lukachko, Hatzenbuehler, & Keyes, 2013), most studies have examined this phenomenon at the individual level, which has left our understanding of how the social context affects discrimination fragmented (Hunt, Wise, Jipguep, Cozier, & Rosenberg, 2007). As such, we aim to clarify how perceived discrimination, a fundamental determinant of health, may be influenced by policies that either protect or hinder the well-being of Latinos (Dahlgren & Whitehead, 2007).

Scholars of immigration have noted that sociopolitical contexts shape opportunities for the integration of (Latino) immigrants and their offspring (Portes & Zhou, 1993; Zhou, 1997). Historically, policies that either support or stigmatize immigrants have constituted an important facet of the social context of reception (Hacker, Kasper, & Morris, 2011). In the contemporary period, a number of anti-immigrant policies have been introduced at the national, state and local level, and such policies have created a hostile environment that stigmatizes the foreign and US-born along racial/ethnic lines (Chavez, 2008; Gee & Ford, 2011; Viruell-Fuentes, Miranda, & Abdulrahim, 2012). One of the most salient of these recent anti-immigrant policies, Arizona's 2010 State Bill 1070 (SB 1070), required state and local law enforcement to check the immigration status of individuals suspected of being undocumented, and made it a state crime for noncitizens to fail to carry proper immigration documentation (Morse, 2011). While some of the most controversial provisions of SB-1070 were struck down, the portion allowing state police to investigate the immigration status of an individual stopped, detained, or arrested if there is reasonable suspicion that the individual is in the country without proper documentation, was upheld (Lam & Morse, 2012).

Following Arizona's SB 1070, dozens of states and counties across the country introduced similar bills, most of whichwere presented under the pretense of securing communities from undocumented immigrants (Morse, 2011). Even the proposal of such laws has contributed to creating an environment that legalizes racial profiling of anyone presumed to be "foreign" simply based on their physical appearance or speech (Viruell-Fuentes et al., 2012). Furthermore, although the main target of anti-immigrant policies are undocumented immigrants, "because race, ethnicity and immigrant status are often conflated, such that all Latinos are presumed to be immigrants and all immigrants are seen as undocumented", in practice these policies likely construct a hostile social environment for an entire social group (Hardy & Bohan, 2012; Viruell-Fuentes et al., 2012). Additionally, anti-immigrant policies may function as an "othering" mechanism; that is, these policies may marginalize, stigmatize and exclude those being "othered", in this case, Latinos (Viruell-Fuentes et al., 2012). To the extent that such marginalization is codified into law and supported by the state, the effects of such policies are likely to be far-reaching.

The ways in which such policies, notably Arizona's SB 1070, manifest themselves in the day-to-day lives of Latinos have been documented in a growing body of literature. These studies provide evidence that anti-immigrant policies result in changes in health and social service use and impact psychological distress (Ayon & Becerra, 2013; Capps, Castenada, Chaudry, & Santos, 2007; Cavazos-Rehg, Zayas, & Spitznagel, 2007; Hacker et al., 2011; Salsa, Ayon, & Gurrola, 2013; Szkupinski Quiroga, Medina, & Glick, 2014). However, studies on the effects of anti-immigrant policies have predominately been *qualitative* in nature and focused on (undocumented) Mexicans in specific states, notably Arizona (Ayon, 2013; Ayon and Becerra, 2013; Hardy & Bohan, 2012; Sabo et al., 2014; Salsa et al., 2013; Szkupinski Quiroga et al., 2014; Toomey et al., 2014). As such q*uantitative* examination of the influence of anti-immigrant policies *across* states among non-Mexican Latinos is relatively limited, and documentation of the ramifications is urgently needed (Hardy et al., 2012). Moreover, because anti-immigrant policies are not seen as health related, they may in fact hide the adverse health impacts, and therefore warrant further analysis (Whitehead & Dahlgren, 2006).

Two theoretical perspectives guide this study. The first, Segmented Assimilation theory posits that outcomes among immigrants to the US have become stratified (Portes, Fernandez-Kelly, & Haller, 2005; Portes & Rumbaut, 2005; Portes & Zhou, 1993; Zhou, 1997). According to Segmented Assimilation individual, familial and contextual factors influence immigrants' segmented trajectories (Portes et al., 2005). Central to contextual factors are societal hostilities and government policies targeting immigrants in the receiving destination. Complementing Segmented Assimilation, Policy Feedback theory unpacks the mechanism by which social policy influences people's attitudes about themselves relative to the government and to other people (Soss, 1999, Schneider & Ingram, 1993). Just as Segmented Assimilation notes that the context of reception can support or stigmatize immigrants, the "educative effects" of policies can be positive or negative, conditioning people's experience with racial/ethnic prejudice. When anti-immigrant policies are proposed and passed, the full weight of the law signals that immigrants and their co-ethnics are less valuable members of the community, providing a measure of justification for unequal treatment that may then translate into perceived discrimination.

Together, these theoretical frameworks propound that exclusionary laws such as anti-immigrant policies could be viewed as discriminatory, and that such policies are a facet of the social context which can influence perceived discrimination and may subsequently impact health. Both frameworks also intimate that national origin, a key factor that determines which features of immigration policy that a foreign-born Latino and their progeny are likely to encounter, should also structure a Latino's social location with respect to the law. Therefore, an analysis that links state-level immigrant policy output to perceived discrimination must also take into consideration that Latinos afforded more integrationist approaches to immigration (i.e. Cuban Americans), as well as those whose citizenship status provides a measure of formal membership in the polity (i.e. Puerto Ricans), might respond differently to anti-immigrant policies than those whose national origins place them more proximately to the stereotypes of immigrants that motivate more restrictive policies in the first place (i.e. Mexican Americans).

Using a nationally representative sample of Latino adults in the US, we expand upon the Perez et al. (2008) study conducted on data collected in 2002–2003 by examining the prevalence and correlates of perceived discrimination using a 2013 data source (Perez et al., 2008). Second, we quantitatively investigate the association between state anti-immigrant policies and perceived discrimination, thus accounting for the most critical change in the anti-immigrant policy climate (i.e. surge in laws passed since 2005), which unfolded in states rather than at the national level. Finally, because racial/ethnic discrimination is likely to intersect with or be impacted by other social statuses, we tested whether the association between anti-immigrant policies and perceived discrimination differed by nativity, generation, citizenship, gender or place of origin.

Methods

Individual-level data came from the National Latino Health Care Survey, a nationally representative cross-sectional telephone survey of 800 self-identified Latino adults aged 18^{+} conducted in 2013. Participants were not required to be US citizens and were selected at random based on landline and cell-phone call lists. The survey was offered in English and Spanish. Further details have been described

elsewhere (Barreto & Sanchez, 2013). In order to obtain reliable estimates for multi-level associations, we excluded those participants living in states where three or fewer individuals were represented in the sample; this yielded a final analytic sample of 719 individuals in 24 states. On average, there were 29.96 individuals per state (range 4–212). To assess perceived discrimination, we used items adapted from the Everyday Discrimination Scale, which has been shown to have good psychometric properties and has been widely used with racial/ethnic minorities in the US and international contexts (Krieger, Smith, Naishadham, Hartman, & Barbeau, 2005; Williams et al., 2008; Williams, Yu, Jackson, & Anderson, 1997). Respondents were asked to indicate how often they experienced any of eight discriminatory situations in their daily life: (e.g. treated with less courtesy/respect than other people; people act as if they are afraid of you; threatened or harassed). The four response categories ranges from "often" [1] to "never" [4]. Because the distribution was non-normal, we dichotomized the variable so that respondents who indicated that they experienced any item in the scale "often" or "sometimes" were coded as having experienced discrimination and respondents who indicated that they "never" or "rarely" experienced these events were coded as not having experienced discrimination. This method has been used in previous studies (Mays & Cochran, 2001; Perez et al., 2008). Our own test of internal consistency reliability yielded a standardized Cronbach alpha score of 0.86.

The state-level exposure variable, anti-immigrant policies, was measured with an index developed by James Monogan (Monogan, 2013). The index measured legislative output between the years 2005–2011 in the 50 states using summaries of immigrant-related laws which had been gathered by the National Conference of State Legislatures. State-level immigrant policies were assessed by Monogan based on the *direction* (pro-immigrant vs. anti-immigrant) and *strength* (symbolic; affecting a small group of immigrants; affecting many immigrants in a substantial way; directly affecting immigrants' ability to reside in a state) of adopted laws in each state. Possible values on the index ranged from -2 to 2, where positive values represented more pro-immigrant policies and negative values represented more anti-immigrant policies. For ease of interpretation we reverse coded the measure so that positive values indicate more anti-immigrant policies, and negative values correspond to more pro-immigrant policies.

Individual-level covariates were hypothesized predictors of perceived discrimination and were self-reported. Socio-demographic factors included age, gender (presumed by the survey administrator), marital status (never married; married/domestic partner; widowed/separated/divorced/other), level of education (some high school or less; high school graduate/GED; some college; college graduate or higher) and income ($<$19,000; 20,000–39,000; 40,000–69,000; ≥70,000). We also assessed place of origin (Puerto Rican; Cuban; Mexican; other Latino), nativity status (US/mainland-born vs. foreign-born), age of arrival to the US, number of years in the US, generation status (firs; second; third), language preference (English vs. Spanish) and documentation status (US citizen or Lawful Permanent Resident [LPR] vs. something else). Additionally, we accounted for state-level factors that may confound the association between anti-immigrant policies and perceived discrimination including percent foreign born, percent high school graduates and percent living below the poverty line (Krieger, 2012; Monogan, 2013). These were obtained from the American Community Survey data from the US Census Bureau and data from 2008 through 2012 were averaged in order to account for the years immediately prior to the survey administration and to limit the impact of year-to-year fluctuations.

State and individual-level data were linked by participants' states of residence, which was obtained from survey data. While missing data was minimal (see Table 1), we conducted Markov Chain Monte Carlo multiple imputation (with 100 imputations) to provide conservative estimates for missing data (Allison, 2001; Little & Rubin, 2002). Analyses that did not impute missing values revealed an identical pattern of results. To account for the sampling scheme unweighted and weighted means and standard deviations (for continuous data), and proportions were calculated for individual-level covariates overall and by reported discrimination. Rao-Scott chi square tests were performed to examine bivariate associations between individual-level covariates and perceived discrimination. While the intraclass correlation was small (ICC=1%), and the p-value to test the model against no dependence was not statistically significant (p=0.19), weighted two-level hierarchical logistic regression models with a random intercept for state of resident were used due to the clustered data structure (individuals nested within states). First, individual-level covariates were included as independent variables in the model followed by state-level covariates. The independent influence of anti-immigrant policies was then tested by including it as a term in the final model. To examine whether individual-level factors modified the association between anti-immigrant policies and perceived discrimination we fit interaction terms (anti-immigrant policies by nativity, generation, citizenship, gender or place of origin), which were added individually into the model. We then calculated the probability of perceived discrimination at distinct levels of the anti-immigrant policy measure, controlling for covariates. For significant or marginally significant interactions ($p < 0.15$), we examined models and plotted the predicted probability of perceived discrimination. All analyses were conducted using SAS V.9.4. The study was approved by an Institutional Review Board.

Results

Table 1 displays the descriptive characteristics of the sample and the bivariate associations between these variables and perceived discrimination. The overall weighted prevalence of perceived discrimination was 68.4%. Most participants were Mexican (57.4%), followed by other Latinos (29.1%); Puerto Rican (9.9%), and Cuban (3.6%). Approximately half of the participants were foreign-born (49.90%) and 90.1% reported their documentation status as US citizen or LPR. Table 1 also shows weighted bivariate associations between individual-level covariates and reporting versus not reporting discrimination. We found significant differences in perceived discrimination by place of origin, generation and age. Puerto Ricans reported significantly more discrimination (80.7%) relative to Cubans (45.8%), Mexicans (67.6%) and other Latinos (68.7%) (p=0.01). Second generation Latinos (76.3%) were more likely than first (64.9%) and third generation Latinos (64.2%) to report discrimination (p=0.01). Participants aged 18–24 reported significantly more discrimination than other age groups (p=0.02).

In unadjusted mixed-effects models, more anti-immigrant policies were significantly associated with perceived discrimination (OR=1.28, 95% CI 1.06–1.56, p=0.01; data not shown in tables). This association was strengthened in models adjusting for individual and state-level covariates (OR=1.62, 95% CI 1.16–2.24, $p < 0.01$) (Table 2, model 3). Specifically, participants in states with more anti-immigrant policies were more likely to report discrimination relative to those living in states with less anti-immigrant policies. The association between anti-immigrant policies and perceived discrimination was significantly moderated by place of origin (F=5.40, p=0.001) and marginally moderated by generation status (F=2.08, p=0.124) (Fig. 1a and b, respectively). Specifically, more anti-immigrant policies were associated with higher probability of perceived discrimination among Cubans, Mexicans and other Latinos, while among Puerto Ricans those living in states with more anti-immigrant policies had a lower probability of perceived discrimination. Additionally, the positive association between anti-immigrant policies and perceived discrimination was marginally strongest among third generation Latinos compared to first and second generation Latinos.

Table 1
Socio-demographic characteristics of sample, overall and by perceived discrimination, National Latino Health Care Survey, 2013 (n=719).

	Total, non-missing	Overall %	Reported Discrimination %	No reported Discrimination %	p-value
	n*		68.4%	31.6%	
Place of origin					0.013*
Puerto Rican	58	9.9	80.7	19.3	
Cuban	25	3.6	45.8	54.2	
Mexican	433	57.4	67.6	32.4	
Other	201	29.1	68.7	31.3	
Nativity status					0.058
Foreign-born	408	49.9	64.9	35.1	
US born	311	50.1	71.9	28.1	
Generation status					0.010*
First	408	49.9	64.9	35.1	
Second	182	31.7	76.3	23.7	
Third	126	18.4	64.2	35.8	
Number of years in US					0.396
0–4	13	2.2	57.9	42.1	
5–9	34	5.4	63.1	36.9	
10–14	47	6.5	74.8	25.2	
15+	599	85.9	68.5	31.5	
Age arrived in US					0.876
0–6	345	54.8	63.8	36.2	
7–17	88	12.9	66.0	34.0	
18–24	117	14.5	62.4	37.6	
25+	144	17.8	72.0	28.0	
Age					0.019*
18–24	61	16.7	76.0	24.0	
25–34	106	16.9	67.8	32.2	
35–44	141	21.6	70.7	29.3	
45–54	160	17.3	72.8	27.2	
55–64	122	12.9	66.5	33.5	
65+	112	14.5	53.5	46.5	
Gender					0.382
Male	313	48.9	70.1	29.9	
Female	406	51.1	66.8	33.2	
Marital status					0.404
Never married	157	28.0	69.7	30.3	
Married/domestic partner	451	59.0	68.7	31.3	
Widowed/separated/divorced/other	105	13.0	64.4	35.6	
Education					0.548
Some HS or less	180	21.4	69.7	30.3	
HS graduate	154	21.8	72.1	27.9	
Some college	187	28.5	68.3	31.7	
College graduate and higher	198	28.3	64.8	35.2	
Annual income (in thousands of USD)					0.686
< 19	198	31.3	67.6	32.4	
20–39	190	28.5	70.7	29.3	
40–69	125	20.2	65.7	34.3	
≥70	118	20.0	69.2	30.8	
Documentation status					0.963
US citizen/LPR	641	90.1	68.5	31.5	
Something else	78	9.9	68.2	31.8	
Language preference					0.291
English	362	43.5	66.3	33.7	
Spanish	357	56.5	70.1	29.9	

* Total column includes unweighted, non-missing sample sizes; overall and stratified columns include weighted percents with imputed data
* $P < 0.05$.

Discussion

We found a high prevalence of discrimination in this nationally representative sample of Latinos in the US. Close to 70% of participants reported discrimination which is comparable to rates for Blacks (Kessler et al., 1999), but more than twice as high as the rate (30%) found by Perez and colleagues among a nationally representative sample of Latinos surveyed in 2002–2003 (Perez et al., 2008). The stark contrast between the prevalence in 2002–2003 and ours may stem from the differences in the Everyday Discrimination Scale used in the current study and the version used by Perez et al. (2008). Although we used the same measure, the current survey included only eight items, rather than the original nine and utilized four response categories rather than six. However, another plausible explanation for the difference is the actual shift since 2003 in the anti-immigrant climate as manifested in state legislation. Following the events of September 11, 2001, immigration enforcement shifted away from the nearly exclusive focus at international borders with Mexico and Canada, towards newly created operations deployed in the interior like the Secure Communities program implemented by the US Immigration and Customs Enforcement. Additionally, in the absence of immigration reform by federal policy makers, states and localities have taken the lead with scores of new laws targeting immigrants including the 1536 new immigrant-related laws adopted by states between 2005 and 2011 (Monogan, 2013). Some of these policies are welcoming, however, many signal to immigrants in particular and Latinos in general, that they are members of a group that is not on equal footing with other members of the community (Morse et al., 2012). As such, an alternative

Table 2
Multivariable associations between perceived discrimination and state anti-immigrant policies, weighted mixed effects models.

	Model 1		Model 2		Model 3	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
State anti-immigrant policies	–	–	–	–	1.62	1.16, 2.24**
Percent foreign born	–	–	1.03	0.99, 1.08	1.04	1.00, 1.08*
Percent 25+ HS graduate or higher	–	–	1.15	1.04, 1.26**	1.05	0.96, 1.15
Percent living below poverty line	–	–	1.11	0.98, 1.26	0.99	0.89, 1.11
Place of origin						
Puerto Rican	1.95	0.99, 3.83*	1.83	0.93, 3.59	1.93	0.97, 3.83
Cuban	0.39	0.13, 1.18	0.34	0.12, 0.95*	0.32	0.12, 0.89*
Mexican	0.89	0.56, 1.42	0.94	0.62, 1.43	0.88	0.58, 1.31
Other	1.00		1.00		1.00	
Generation						
First	1.38	0.61, 3.17	1.29	0.57, 2.95	1.26	0.57, 2.79
Second	1.51	0.91, 2.5	1.48	0.88, 2.5	1.49	0.89, 2.49
Third	1.00		1.00		1.00	
Number of years in US						
0–4	0.76	0.28, 2.07	0.77	0.3, 2	0.88	0.35, 2.25
5–9	1.05	0.48, 2.33	1.07	0.49, 2.33	1.12	0.51, 2.46
10–14	1.68	0.84, 3.38	1.71	0.86, 3.39	1.66	0.82, 3.35
15+	1.00		1.00		1.00	
Age arrived in US						
0–6	1.00		1.00		1.00	
7–17	0.44	0.19, 1.04	0.46	0.2, 1.06	0.46	0.2, 1.05
18–24	0.46	0.15, 1.38	0.45	0.16, 1.32	0.44	0.15, 1.28
25+	0.56	0.23, 1.35	0.56	0.24, 1.32	0.56	0.24, 1.3
Age						
18–24	2.82	1.33, 5.98**	2.79	1.31, 5.95**	2.65	1.23, 5.7*
25–34	1.88	1.24, 2.85**	1.85	1.21, 2.81**	1.77	1.17, 2.68**
35–44	2.26	1.26, 4.05**	2.24	1.27, 3.98**	2.31	1.31, 4.04**
45–54	2.68	1.58, 4.53***	2.71	1.59, 4.63***	2.74	1.6, 4.71***
55–64	2.01	1.25, 3.22**	2.05	1.28, 3.28**	2.00	1.26, 3.18**
65+	1.00		1.00		1.00	
Gender						
Male	1.24	0.9, 1.71	1.24	0.9, 1.73	1.23	0.88, 1.71
Female					1.00	
Marital status						
Never married	0.73	0.47, 1.13	0.71	0.46, 1.11	0.72	0.47, 1.12
Married/domestic partner	1.01	0.72, 1.42	1.01	0.72, 1.43	1.02	0.73, 1.43
Widowed/separated/divorced/other	1.00		1.00		1.00	
Education						
Some HS or less	1.74	1.09, 2.77*	1.83	1.14, 2.93*	1.86	1.17, 2.98**
HS graduate	1.47	0.87, 2.49	1.51	0.89, 2.55	1.52	0.89, 2.59
Some college	1.17	0.76, 1.8	1.19	0.76, 1.86	1.18	0.76, 1.85
College graduate and higher	1.00		1.00		1.00	
Income (in thousands of USD)						
< 19	1.01	0.59, 1.71	0.98	0.59, 1.65	0.98	0.58, 1.64
20–39	1.20	0.68, 2.13	1.18	0.67, 2.07	1.16	0.65, 2.07
40–69	0.87	0.48, 1.6	0.86	0.47, 1.55	0.82	0.46, 1.45
≥70	1.00		1.00		2.45	0.93, 6.45
Documentation status						
US citizen/LPR	0.92	0.55, 1.52	0.91	0.55, 1.49	0.93	0.57, 1.52
Something else/DK/ref	1.00		1.00		1.00	
Language preference						
English	0.99	0.56, 1.75	1.01	0.6, 1.71	1.01	0.59, 1.7
Spanish	1.00		1.00		1.00	

Note: Models estimated using generalized mixed models with a random intercept to account for clustering of individuals in states. All other variables were treated as fixed effects.
OR=Odds Ratio
CI=Confidence interval
* P < 0.05.
** P < 0.01.
*** P < 0.001.

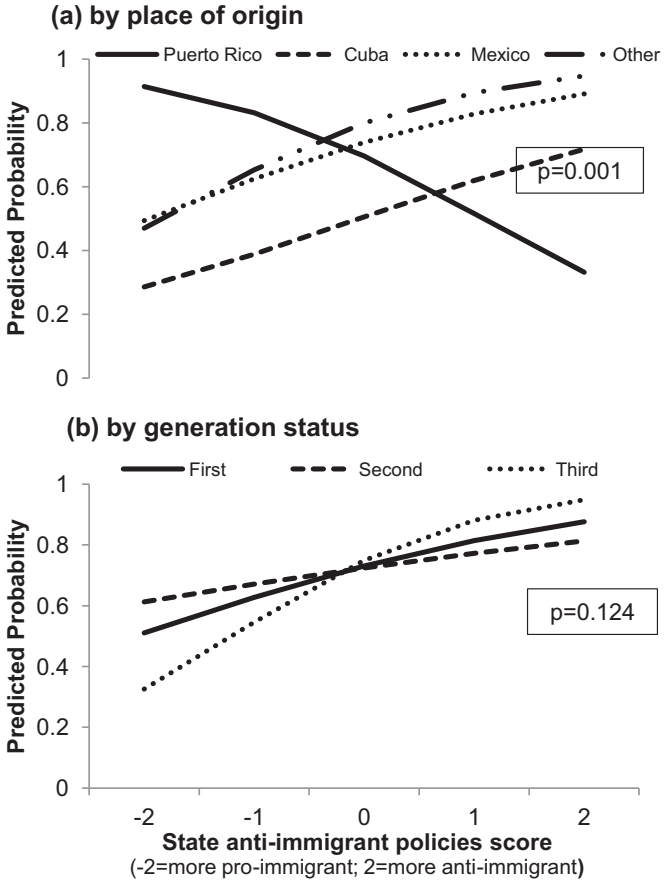

Fig. 1. Cross-level interaction between anti-immigrant policies and perceived discrimination by a) place of origin, b) generation

interpretation of the higher prevalence of perceived discrimination in our study is that among Latinos in the US, discrimination is more likely to be sanctioned by the state government, and thus is more proximate in their day-to-day life in 2013 that it was in 2003.

Certain results of our bivariate analyses are consistent with socio-demographic and socio-economic correlates of discrimination found by Perez et al. (2008). Specifically, place of origin, generation status and age were all positively associated with perceived discrimination. Interestingly, neither documentation status nor language preference was associated with perceived discrimination. These non-findings speak to the unintended consequences of policy. Proponents of anti-immigrant policies may presume that the impact of their laws is contained to undocumented immigrants living in their states. Evidence from this study suggests that even those with lawful status, as well as those presumably more likely to be integrated members of their communities, are not immune to the negative influence of these state-level policies aimed at their undocumented counterparts.

More anti-immigrant policies were associated with higher perceptions of discrimination, even after controlling for potential independent risk factors for discrimination. These results demonstrate the direct association between anti-immigrant policies and perceived discrimination, which is a well-established, independent predictor of adverse health outcomes (Gee, 2002; Williams et al., 2003). Previous studies have used *qualitative* methods to examine the effects of anti-immigrant policies on health behavior and health care use. However, to date the implications of such policies on social stressors and subsequent health have not been *quantitatively* documented (Hacker et al., 2011; Hardy and Bohan, 2012; Hardy et al., 2012). This is the first study to use a nationally representative sample of Latinos to investigate the quantitative association between state anti-immigrant policies and a fundamental determinant of health (Nazroo, 2003). Consistent with Segmented Assimilation, our study provides evidence that the social context, specifically state-level policies, is associated with experiences of discrimination and may help explain differential patterns of health among and between Latinos in the US (Gee & Ford, 2011; Williams et al., 2008). Further, non-health government policies, as an important aspect of the social context of reception may conceal the adverse health impact on all Latinos, and as such must be closely monitored (Dahlgren & Whitehead, 2007; Whitehead & Dahlgren, 2006; Zhou, 1997). Our study lays the groundwork for future studies to quantitatively document if and *how* anti-immigrant policies impact Latinos' health and access to health care which are necessary to complement qualitative documentation of these associations (Ayer, 2013; Hacker et al., 2011; Sabo et al., 2014; Salsa et al., 2013).

The relationship between anti-immigrant policies and perceived discrimination was moderated by place of origin and was marginally moderated by generation status. Notably, the association between anti-immigrant policies and discrimination was marginally strongest among third generation Latinos. This finding provides evidence that the implications of anti-immigrant policies extend beyond immigrant and documentation status. For Mexicans, Cubans and other Latinos, more anti-immigrant policies were associated with higher likelihood of perceived discrimination. In contrast, for Puerto Ricans the opposite was true, such that Puerto Ricans living in *less* anti-immigrant states were more likely to report discrimination relative to those living in *more* anti-immigrant states. A possible explanation, supported by the Policy Feedback theory, is that Puerto Ricans in more anti-immigrant states may conclude that compared to other Latinos, their experiences of discrimination are relatively not as bad. Additionally, it is critical to appreciate that Puerto Ricans are US citizens and are not formally subject to deportations. As such, sources of discrimination may differ for Puerto Ricans contending with structural disadvantages that operate despite a welcoming context towards immigrants.

There are several limitations that warrant mention. First, the cross-sectional nature of the data does not allow us to draw causal inferences about the relationship between anti-immigrant polices and discrimination. Additionally, because participants were asked about discrimination in their day-to-day life, we cannot establish the temporal order of anti-immigrant policies and perceptions of discrimination. Second, anti-immigrant policies were measured during 2005–2011 and perceived discrimination was assessed in 2013. Although there was an overall decline in immigrant-related legislation in 2012 (Johnson & Morse, 2013), it is nevertheless possible that policies in some states shifted between 2011 and 2013. However, it is more likely that the policy index assessed the general anti-immigrant sentiment in the state, which is less prone to change over the course of two years. Anti-immigrant policies, which based on Policy Feedback theory may be a barometer of anti-immigrant climate, are an environmental stressor which is associated with discrimination and may subsequently affect health (Ayon, 2013; Ayon & Becerra, 2013; Gee & Ford, 2011; Hacker et al., 2011; Hardy & Bohan, 2012; Martinez et al., 2013; Szkupinski Quiroga et al., 2014; Toomey et al., 2014). Another limitation is that because the anti-immigrant policy index is a blunt measure, we are not able disentangle which immigrant policies are more relevant for discrimination and subsequently for health. However, this index captures the totality of laws within a state and the study demonstrates that on balance, state-level anti-immigrant policies are important in terms of perceived discrimination among Latinos *across* the US.

Conclusion

Beginning with California in the 1990s and Arizona in the early 2000s there has been a proliferation of state-level anti-immigrant policies which spread across the US (Alvarez & Butterfield, 2000; Monogan, 2013). The notion that the broad anti-immigrant climate in the US can contribute to experiences of discrimination and health has been put forth (Gee & Ford, 2011). A growing body of literature,

primarily qualitative and conducted within states, specifically Arizona, has begun to identify the effects of anti-immigrant policies on heath behavior, health care use and psychological distress mainly among (undocumented) Mexicans (Ayon, 2013; Ayon & Becerra, 2013; Hacker et al., 2011; Hardy & Bohan, 2012; Lauderdale, 2006; Martinez et al., 2013; Sabo et al., 2014; Salsa et al., 2013; Szkupinski Quiroga et al., 2014). The current study extends this work by looking broadly at anti-immigrant policies *across* states and quantitatively demonstrating that these policies are associated with perceived discrimination among Latinos. Results may help explain health patterns among this population group and point to possible mechanism by which anti-immigrant policies affect health. As recent political rhetoric serves to further marginalize (Latino) immigrants, and comprehensive immigration reform remains a political topic, it is more important than ever to understand the health impact of anti-immigrant policies on all Latinos.

References

Allison, P. D. (2001). *Missing data* Thousand Oaks, CA: Sage Publications.

Alvarez, M. R., & Butterfield, T. L. (2000). The resurgence of nativism in California? The case of Proposition 187 and illegal immigration. *Social Psychology Quarterly*, *81*(1), 167–179.

Ayer, C. (2013). Mexican immigrant families under siege: The impact of anti-immigrant policies, discrimination, and the economic crisis. *Advances in Social Work*, *14*(1), 206–228.

Ayon, C. (2013). Service needs among Latino immigrant families: Implications for social work practice. *Social Work*, *59*(1), 13–23.

Ayon, C., & Becerra, D. (2013). Mexican immigrant families under siege: The impact of anti-immigrant policies, discrimination, and the economic crisis. *Advances in Social Work*, *14*(1), 206–228.

Barreto, M., & Sanchez, G. (2013). National Latino Health Care Survey. Retrieved from⟨http://www.latinodecisions.com/recent-polls/2013-polling-resul/⟩

Capps, R., Castenada, R. M., Chaudry, A., & Santos, A. (2007). *Paying the price: The impact of immigration raids on America's children* Washington, DC: National Council of La Raza.

Cavazos-Rehg, P. A., Zayas, L. H., & Spitznagel, E. L. (2007). Legal status, emotional well-being and subjective health status of Latino immigrants. *Journal of the National Medical Association*, *99*(10), 1126–1131.

Chavez, L. R. (2008). *The Latino threat: Constructing immigrants, citizens, and the nation* Stanford, CA: Stanford University Press.

Cook, B., Alegria, M., Lin, J. Y., & Guo, J. (2009). Pathways and correlates connecting Latinos' mental health with exposure to the United States. *American Journal of Public Health*, *99*(12), 2247–2254.

Dahlgren, D., & Whitehead, M. (2007). European strategies for tackling social enequalities in health: Levelling up part 2. from WHO Regional Office for Europe ⟨http://www.thehealthwell.info/node/91930⟩

Flores, E., Tschann, J. M., Dimas, J. M., Bachen, E. A., Pasch, L. A., & de Groat, C. L. (2008). Perceived discrimination, perceived stress, and mental and physcial health among Mexican-origin adults. *Hispanic Journal of Behavioral Sciences*, *30*(4), 401–424.

Gee, G. C. (2002). A multilevel analysis of the relationship between institutional and individual racial discrimination and health status. *American Journal of Public Health*, *92*(4), 615–623.

Gee, G. C., & Ford, C. L. (2011). Structural racism and health inequalities. *Du Bois Review: Social Science Research on Race*, *8*(1), 115–151.

Hacker, K., Chu, J., Leung, C., Marra, R., Pirie, A., Brahimi, M., & Marlin, R. P. (2011). The impact of immigration and customes enforcement on immigrant health: Perceptions of immigrants in Everett, Massachusetts, USA. *Social Science Medicine*, *73*, 586–594.

Hacker, K., Kasper, J., & Morris, J. (2011). S-Comm immigration initiative is bad for our health. *Access denied: A conversation on un/authorized im/migration and health*, from⟨http://accessdeniedblog.wordpress.com/2011/07/21/s-comm-immigration-initiative-is-bad-for-our-health-karen-hacker-jennifer-kasper-and-juliana-morris/⟩

Hardy, L. J., & Bohan, K. (2012). A Beautiful Life–Hermosa Vida–Nizhoni Lina: Community engaged assessment and strategy report. InN. C.Healthcare(Ed.), (2nd Ed.ed.). Flagstaff, AZ.

Hardy, L. J., Getrich, C. M., Quezada, J. C., Guay, A., Michalowski, R. J., & Henley, E. (2012). A call for further research on the impact of state-level immigration policies on public health. *American Journal of Public Health*, *102*(7), 1250–1254.

Hunt, M. O., Wise, L. A., Jipguep, M. C., Cozier, Y. C., & Rosenberg, L. (2007). Neighborhood racial composition and perceptions of racial discrimination: Evidence from the Black Women's Health Study. *Social Psychology Quarterly*, *70*(3), 272–289.

Johnson, A., & Morse, A. (2013). 2012 Immigration-related laws and resolutions in the States (Jan. 1-Dec. 31, 2012). Washington, DC: National Conference of State Legislatures

Kessler, R. C., Mickelson, K. D., & Williams, D. R. (1999). The Prevalence, distribution and mental health correlates of percieved discrimination in the United States. *Journal of Health and Social Behavior*, *40*(3), 208–230.

Krieger, N. (2012). Methods for the scientific study of discrimination and health: An ecosocial approach. *American Journal of Public Health*, *102*(5), 936–944.

Krieger, N., Smith, K., Naishadham, D., Hartman, C., & Barbeau, E. M. (2005). Experiences of discrimination: Validity and reliability of a self-report measure for population health research on racism and health. *Social Science Medicine*, *61*(7), 1576–1596.

Lam, C., & Morse, A. (2012). U.S. supreme court rules on Arizona's immigration enforcement law. Washington, DC: National Conference of State Legislatures

Lauderdale, D. S. (2006). Birth outcomes for Arabic-named women in California before and after September 11. *Demography*, *43*(1), 185–201.

Little, R. J., & Rubin, D. B. (2002). *Statistical analysis with missing data* Hoboken, NJ: John Wiley Sons, Inc.

Lopez, M. H., Morin, R., & Taylor, P. (2010). *Illegal immigration backlash worries divide Latinos. Hispanic Trends* Washington, DC: Pew Research Center.

Lukachko, A., Hatzenbuehler, M. L., & Keyes, K. M. (2013). Structural racism and myocardial infarction in the United States. *Social Science Medicine*, *103*, 42–50.

Martinez, O., Wu, E., Sandfort, T., Dodge, B., Caraballo-Dieguez, A., Pinto, R., & Chavez-Baray, S. (2013). Evaluating the impact of immigration policies on health status among undocumented immigrants: A systematic review. *Journal of Immigrant and Minority Health*.

Mays, V. M., & Cochran, S. D. (2001). Mental health correlates of percieved discrimination among lesbian, gay, and bisexual adults in the United States. *American Journal of Public Health*, *91*, 1869–1876.

Monogan, J. E. (2013). The politics of immigrant policy in the 50 US states, 2005–2011. *Journal of Public Policy*, *33*(1), 35–64.

Morse, A. (2011). Arizona's immigration enforcement laws. Washington, DC: National Conference of State Legislatures

Morse, A., Johnson, A., Heisel, H., Carter, A., Lawrence, M., & Segreto, J. (2012). Immigrant policy project: State omnibus immigration legislation and legal challenges. Washington, DC: National Conference of State Legislatures

Nazroo, J. Y. (2003). The structuring of ethnic inequalities in health: Economic position, racial discrimination, and racism. *American Journal of Public Health*, *93*, 277–284.

Perez, D. J., Fortuna, L., & Alegria, M. (2008). Prevalence and correlates of everyday discrimination among US Latinos. *Journal of Community Psychology*, *36*(4), 421–433.

Portes, A., Fernandez-Kelly, P., & Haller, W. (2005). Segmented assimilation on the ground: The new second generation in early adulthood. *Ethnic and Racial Studies*, *28*(6), 1000–1040.

Portes, A., & Rumbaut, R. G. (2005). Introduction: The second generation and the children of immigrants longitudinal study. *Ethnic and Racial Studies*, *28*(6), 983–999.

Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *Annals of the American Academy of Political and Social Science*, *530*, 74–96.

Sabo, S., Shaw, S., Ingram, M., Teufel-Shone, N., Carvajal, S., Guernsey de Zapien, J., & Rubio-Goldsmith, R. (2014). Everyday violence, structural racism and mistreatment at the US-Mexico border. *Social Science Medicine*, *109*, 66–74.

Salsa, L. M., Ayon, C., & Gurrola, M. (2013). Estamos traumados: The effects of anti-immigrant sentiment and policies on the mental health of Mexican immigrant families. *Journal of Community Psychology*, *41*(8), 1005–1020.

Schneider, A., & Ingram, H. (1993). Social construction of target populations. *American Political Science Review*, 87(2), 334–347.

Soss, J. (1999). Lessons of welfare: Policy design, political learning, and political action. *The American Political Science Review*, 93(2), 363–380.

Szkupinski Quiroga, S., Medina, D. M., & Glick, J. (2014). In the belly of the beast: Effects of anti-immigration policy on Latino community members. *American Behavioral Scientist*, *58*(13), 1723–1742.

Toomey, R. B., Umana-Taylor, A. J., Williams, D. R., Harvey-Mendoza, E., Jahromi, L. B., & Updegraff, K. A. (2014). Impact of Arizona's SB 1070 immigration law on utlitization of health care and public assistance among Mexican-origin adolescent mothers and their mother figures. *American Journal of Public Health*, *104*(S1), S28–S34.

US Census Bureau (2014). 2014 Facts for features: Hispanic HeritageMonth: Sept, 15-Oct, 1, 5, 2014,

Viruell-Fuentes, E. A. (2007). Beyond acculturation: Immigration, discrimination and health research among Mexicans in the United States. *Social Science Medicine*, *65*(7), 1524–1535.

Viruell-Fuentes, E. A., Miranda, P. Y., & Abdulrahim, S. (2012). More than culture: Structural racism, intersectionality theory and immigrant health. *Social Science Medicine*, *75*, 2099–2106.

Whitehead, M., & Dahlgren, D. (2006). *Concepts and principles for tackling social inequities in health: Levelling up Part 1*. Copenhangen: WHO Regional Office for Europe.

Williams, D. R., Gonzalez, H. M., Williams, S., Mohammed, S. A., Hashim, M., & Stein, D. J. (2008). Percieved discrimination, race and health in South Africa. *Social Science Medicine*, *67*(3), 441–452.

Williams, D. R., & Mohammed, S. A. (2009). Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine*, *32*(1), 20–47.

Williams, D. R., Neighbors, H. W., & Jackson, J. S. (2003). Racial/ethnic discrimination and health: Findings from community studies. *American Journal of Public Health*, *93*(2), 200–208.

Williams, D. R., Yu, Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health. *Journal of Health Psychology*, *2*(3), 335–351.

Zhou, M. (1997). Segmented assimilation: Issue, controversies, and recent research on the new second generation. *International Migration Review*, *31*(4), 975–1008.