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An empirical analysis of White privilege, social position and health

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ABSTRACT

Accumulated evidence has demonstrated that social position matters for health. Those with greater socioeconomic resources and greater perceived standing in the social hierarchy have better health than those with fewer resources and lower perceived standing. Race is another salient axis by which health is stratified in the U.S., but few studies have examined the benefit of White privilege. In this paper, we investigated how perceptions of inequality and subjective and objective social status affected the health and well-being of $N = 630$ White residents in three Boston neighborhoods lying on a social gradient differentiated by race, ethnicity, income and prestige. Outcomes were self-rated health, dental health, and happiness. Results suggested that: neighborhood residence was not associated with health after controlling for individual level factors (e.g., positive ratings of the neighborhood, education level); objective measures of socioeconomic status were associated with better self-reported and dental health, but subjective assessments of social position were more strongly associated; and White residents living in the two wealthiest neighborhoods, and who perceived Black families as welcome in their neighborhoods enjoyed better health than those who believed them to be less welcome. However, those who lived in the least wealthy and most diverse neighborhood fared worse when reporting Black families to be welcome. These results suggest that White privilege and relative social position interact to shape health outcomes.

1. Introduction

A substantial literature has shown that lower placement in the social hierarchy has deleterious health effects. But do those at the top of the hierarchy reap benefits because others are at the bottom? Subramanian et al., (2005) examined differences in self-rated health among Black and White residents in U.S. metropolitan areas with populations of 100,000 or more, finding significant variation in racial disparities across metro areas—with Black health rates more variable than Whites'. An unexpected finding was that areas with higher probabilities of poor health for Whites were those in which the White–Black health disparity was narrow. In other words, the absolute health of Whites was better where they held a larger health advantage relative to Black counterparts (Subramanian et al., 2005). Why might the health status of Whites depend on a relative health advantage to Blacks?

We may speculate that Whites may enjoy better health when the Black–White disparity is wide because of material opportunity hoarding. That is, if Whites disproportionately hold desired material resources, so that better quality of life is more tightly bound to White space and health-deleterious exposures are more acutely concentrated in Black communities, this may produce cities with wider racial disparities in health. For example, Black neighborhoods are more likely to contain liquor stores (Berke et al., 2010; LaVeist and Wallace, 2000) and other noxious exposures, raising the possibility that wider racial disparities benefit Whites because the disparities reflect geographically quarantined health risks from which Whites are protected.

It is also possible that per Du Bois, the psychological "wages" accrued from whiteness (see Harris, 1993) benefit health—and these wages find greater remuneration in areas where the distinction between social status among Blacks and Whites is greatest. At a psychological level, socioeconomic gradients in health among Whites may be linked to perceptions of appropriate life stations. That is, poor Whites may face health risks not merely due to meager resources, but because being poor disconfirms expected

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rewards from being White. Those who then grow up to be better off may be healthier because they experience "relief at having fulfilled a cultural aspiration for wealth and from finding the rewards consistent with their expectations" (Pearson, 2008 p. 42). Indeed, McDermott's (2006) ethnographic work in Atlanta showed that White residents who lived among Black neighbors experienced their whiteness as an individual weakness or failure. Harris (1993) sees the expected rewards of whiteness as "a treasured property in a society structured on racial caste. In ways so embedded that it is rarely apparent, the set of assumptions, privileges, and benefits that accompany the status of being White have become a valuable asset … Whites have come to expect and rely on these benefits, and over time these expectations have been affirmed, legitimized, and protected by the law" (p. 1713). For Harris, whiteness has the characteristics of property, including a right to exclude, and rights, freedoms and privileges that are a legitimate and settled expectation.

These settled expectations have not been adequately addressed in racial health disparities research (Jones et al., 2008). Jones and colleagues argue that research tends not to interrogate White privilege—the benefits and unfair advantage accorded to whiteness—but rather focuses on the disadvantage of non-Whites. Unfair advantage includes benefit of the doubt, high expectations, trust, laxity in rule enforcement, and day-to-day breaks that Whites either see as luck or fail to notice at all (Jones et al., 2008). These advantages benefit health. Individuals who are seen by the public as White (socially assigned race)—regardless of their own racial self-identification—have better health outcomes than those who are not perceived to be White. Moreover, individuals socially assigned as White have essentially the same health status as individuals who self-identify as White (Jones et al., 2008).

Taken together, the health advantage experienced by Whites in the U.S. reflects their position in a racialized social system, which classifies Whites at the top of the hierarchy (Bonilla-Silva, 1996). Whiteness confers health advantages through material resources and opportunities, positive public regard, and a baseline of settled expectations that are codified in law. Thus, subjective social status is an appropriate way to explore why Whites might fare better in metropolitan areas where they experience a greater health advantage relative to those who are classified at the bottom of the hierarchy.

Subjective social status is typically assessed with a depiction of a ladder that represents where people stand in society; the top of the ladder represents people with the most money, education and best jobs, and the lowest rung the opposite. Respondents are asked to rank their social status by placing themselves on the ladder, and assessments generally represent a cognitive average of standard objective measures (e.g., income, education), as well as an assessment of current and future prospects (Singh-Manoux et al., 2005). In the Whitehall II Study, subjective social status was more strongly related to health than objective measures. We may interpret these findings as evidence that subjective social status more precisely measures socioeconomic position by allowing for inclusion of past and future status; or as evidence that it captures relative position in the social hierarchy (Singh-Manoux et al., 2005).

If whiteness confers expectations of privilege, then health advantages may stem from perceived ranking at the top of the social hierarchy. That is, after accounting for objective resources, perceptions of race-appropriate social status may account for health status. Whites may fare better in areas where the relative gap to Blacks is larger because those gaps are consistent with the settled expectations of whiteness. Therefore, although the literature on social gradients and health suggest that being (or perceiving oneself to be) at the top of the socioeconomic hierarchy is most beneficial to health, it may be the case that for Whites to accrue health benefits, living in contexts where one perceives a greater relative gap to others is more important.

To investigate these ideas, we examined the self-rated health of White residents of three spatially distinct Boston neighborhoods, each with different demographic profiles. First, we asked whether neighborhoods follow an inverse social gradient in health. The neighborhoods of Back Bay, South End, and Jamaica Plain are all affluent, and like Boston, predominantly White. However, they span a gradient income and wealth and percentage of White residents. If absolute resources were most important, residence in Jamaica Plain would be associated with the least favorable health profile, concordant with the standard social gradient. However, if living in contexts where inequalities are greater were especially conducive to the health of Whites (as shown in Subramanian et al. (2005), residing in Jamaica Plain would be associated with the most favorable health profile. Second, we assessed the interplay between subjective and objective social status, and associations with health and well-being.

2. Methods

2.1. Setting

The city of Boston is the 20th largest U.S. city, with a total population of approximately 617,000 in 2010. It is also one of the most segregated cities in the country, with a Black–White dissimilarity index in 2010 of 69.2 (Spatial Structures in the Social Sciences, 2011). Boston also has a history of contentious race relations. An iconic image of White response to desegregation is Stanley Forman's "The Soiling of Old Glory", in which a White protestor attacks a Black passerby with an American flag during a 1976 anti-busing rally at Boston's City Hall (Forman, 2013). In fact, neighborhood and school segregation has remained at high levels over time. During the 1990s, the city lost 47,000 Whites to the suburbs; in 2000, the city maintained a multi-ethnic core with suburbs that were over 90% White, and overwhelmingly less than 1% Black (McArdle, 2003). The Boston metropolitan area also has a high cost of living. In the first quarter of 2013, the median sales prices of single-family properties and condominiums were $388,250 and $415,000, respectively (Greater Boston Association of Realtors, 2013). Home prices vary substantially by neighborhood and are often racially patterned, as in the three target neighborhoods.

We selected census tracts to represent variation in race, ethnicity and socioeconomic resources. Although the census tracts are all predominantly White, given differing histories and more contemporary changes including gentrification, census demographics are heterogeneous, as shown in Table 1. Two of the three census tracts are from neighborhoods that retain coveted landmark district status, indicating physical features of historical, social, cultural, architectural, or esthetic significance and that lend the neighborhood a distinctive character in the city (City of Boston, 2013b).

The first neighborhood is the Back Bay Architectural District, designated in 1966. This neighborhood is described as a historically important center for American culture, home to artists, writers and philosophers. Back Bay is known for elegant residential architecture and street facades, (City of Boston, 2013a) and for international and boutique commerce (Boston Redevelopment Authority, 2013a). Real estate is among the highest priced in the city; two residential parking spaces alone sold in June 2013 for $560,000 (Johnston, 2013).

The second neighborhood is the South End landmark district, which is characterized predominantly by Italianate rowhouses (City of Boston, 2013c). Developed in the 1830s for wealthy

Table 1
Population characteristics across neighborhoods.

	Jamaica Plain			South End			Back Bay			City of Boston		
	1990	2000	2010	1990	2000	2010	1990	2000	2010	1990	2000	2010
Race & ethnicity												
% Black	5.4	12.5	14.9	11.7	11	8.5	1.7	1.8	2.6	–	25.3	24.4
% White	17.7	44.8	50.8	40.9	55.4	62.7	90.7	89.8	87.7	–	54.5	53.9
% Latino	75.3	64.2	51.3	25.4	26	19.6	3.7	4.2	5	–	14.4	17.5
Tenure												
% owners	20.4	23.4	32	22.2	30.9	40.6	39.9	43.3	49.2	–	32.2	33.4
Poverty												
% poverty	28.5	16.7	23	20.3	27.6	15.6	12.2	1.5	0	–	15.3	15.9
Income												
Median HH income	$23,438	$40,968	$49,013	$28,154	$43,646	$81,331	$43,686	$71,671	$112,284	–	39,629	50,684
White median HH income	–	$40,726	$74,306	–	$69,545	$104,209	–	$75,000	$110,302	–	46,291	62,739
Black median HH income	–	$33,584	$9,754	–	$9,547	$11,644	–	$73,542	N/A	–	30,447	35,632
Latino median HH income	–	$40,938	$27,321	–	$11,345	$9,650	–	$35,833	$80,110	–	27,141	29,886

Note: Data Source: SocialExplorer.com. Median incomes and % poverty for 2010 are based on 2006–2010 American Community Survey 5-year estimates. All other variables come from decennial census data for that year. (–) Indicates data not available for that year.

Bostonians, the area's elegant homes held cachet for a few decades, but unrealized demand led the city to redirect working class residents and immigrants to the neighborhood. After many years and a trajectory of disinvestment, the neighborhood became an epicenter for social disorder and violent crime, and the neighborhood sustained significant population decline (Small, 2004). This state of affairs persisted until the city began to implement urban renewal projects in the mid 1960s, which attracted White middle class buyers eager to purchase homes at a relative discount. By the end of the twentieth century, it was one of the most expensive neighborhoods in the city (Small, 2004), making residence there perilous for renters and owners who could not afford increased property taxes (McArdle, 2003). Belying its reputation as a diverse neighborhood with 45% of residents being non-White (Boston Redevelopment Authority, 2013c), substantive integration does not bear out in daily life (Small, 2004).

Finally, the third neighborhood is Jamaica Plain, located in the southwest section of the city. Originally a summer resort destination for Boston city residents—a "classic streetcar suburb" (Boston Redevelopment Authority, 2013b), the community housed middle class residents in stately Victorian homes. However, the neighborhood faced depopulation, after plans to build an 8-lane interstate expressway (that was never built) resulted in the razing of over 120 acres of residential and industrial land in Jamaica Plain and nearby Roxbury (Southwest Corridor Coalition, unknown). The loss of housing, jobs, and changes to the topography initially led to significant decline, but Black and Latino residents later took up residence in the community, and in more recent years, the neighborhood has seen an influx of White "young families and professionals" and a growing gay and lesbian population (Boston Redevelopment Authority, 2013b).

2.2. Sampling & data collection

Address based sampling was used to randomly select equal sized samples of households from within each neighborhood, in order to invite individuals aged 18 years or older to participate in a mail survey. Because population size varied by neighborhood, residents in each had different probabilities of selection. Initially, 2400 sample addresses, 800 from each neighborhood, were sent a mailed questionnaire packet, which included a postage-paid return envelope for people to send the questionnaire back, and a $2 incentive in the form of two $1 bills. Approximately seven days after the first mailing, each of the 2400 sample addresses was sent a postcard reminder. Finally, about two weeks after the postcard reminder, a second packet was sent to each sample address for which a completed questionnaire was not returned. The packet was the same as the first packet, minus the $2 incentive. Questionnaires returned by the post office as undeliverable (10.4%) were categorized as such for sample documentation purposes, and replaced with another sample address from the same neighborhood. A random half of the mailed questionnaires instructed the youngest household member aged 18 or older to complete the questionnaire, while the other random half contained instructions directing the oldest person to do so. Response rates averaged 38% across the three neighborhoods.

2.3. Measures

Demographic characteristics were assessed with items inquiring about age, gender, highest level of education, duration lived in current residence, political orientation (ranging from extremely liberal to extremely conservative), income, and financial strain. Income asked participants to select the category (e.g., $20,000–$29,999) that best represented total household pre-tax income. Income was then operationalized as the midpoint of the selected range divided by the square root of the number of people that the reported income supported (Subramanian et al., 2005). Financial strain was a one-item measure that asked participants how comfortably their household lived on the reported income, whether they "always have enough money for the things you need", "sometimes don't have enough money," or "often don't have enough money."

To examine the relative contributions of subjective and objective social status, we used several measures. Subjective social status was first measured with a commonly employed ladder (Adler et al., 2000). Participants were shown a drawing of a ladder with the following instructions: "Think of this ladder as representing where people stand in society. At the top of the ladder are the people who are best off—those who have the most money, most education and the best jobs. At the bottom are the people who are worst off—who have the least money, least education and the worst jobs or no job. The higher up you are on this ladder, the closer you are to people at the very top and the lower you are, the closer you are to the bottom. Where would you put yourself on the ladder? Please place a large 'X' on the rung where you think you stand." This ladder has 10 rungs, and thus participants rank themselves with a value ranging from 1 (worst off) to 10 (best off).

Second, we asked participants to rank their neighbors using the same ladder. Subtracting neighbor rankings from participants' own

placement on the ladder gave a continuous measure of neighborhood socioeconomic inequality. For example, if a participant ranked herself as the lowest ladder rung at 1, but felt that her neighbors were at the top of the social hierarchy at 10, her inequality score would be −9. We also created a categorical neighborhood status variable based on these rankings, defining three groups: same as neighbors (difference in equality questions = 0), worse off than neighbors (difference in equality questions <0) and better off than neighbors (difference in equality questions>0). Finally, because "exclusivity" in U.S. neighborhoods is frequently coextensive with exclusionary White space, participants were asked to rate how welcoming people in their neighborhood would be "If a Black family were to move into your neighborhood." Perception of whether Blacks are welcome in the community was modeled in three groups combining the results from the Likert response scale question; very welcoming, somewhat welcoming, somewhat unwelcoming/indifferent/not at all welcoming.

These perceptions of welcome to Black families gave an indication of neighborhood racial inequality.

Objective social status was assessed with: 1) participant income (described above); and 2) relative differences to area income, measured as the difference between participant income and the median household income in the census tract, as well as the difference between participant income and the median income for White households alone.

Health outcomes examined include: overall self-rated health, in which participants rated their health as either excellent, very good, good, fair, or poor (lower scores are better); self-rated dental health (hereafter, referred to as dental health), in which participants made the same assessment for "the overall condition of your teeth, gums, and mouth at the present time"; and happiness, a one-item measure that asked participants, "Taking all things together, how would you say things are these days?" Responses ranged from very happy to not happy at all.

Finally, control variables assessed perceptions about the neighborhood and social conditions for Black people in Boston and the U.S. more broadly. Positive regard for the neighborhood was assessed with one item, "On the whole, how much do you like or dislike your current neighborhood as a place to live?" (Higher scores are more favorable). Perceptions of how much rental discrimination Black Bostonians faced was assessed with, "How much discrimination do you think there is that makes it hard for Black people in Boston to buy or rent housing wherever they want?" (Higher scores indicate more perceived discrimination). A broader assessment of how much racism Black people faced in the United States was operationalized with a 4-item measure adapted from the Group Impact subscale of the Racism and Life Experience Scale (Harrell, 1997), with higher mean scores indicating greater perceptions of racism.

3. Analytic plan

Regression analyses for survey data with complex sampling designs were conducted in SAS 9.4 and Stata/SE 13.1. Statistical significance was assessed as $p < 0.05$. Because the data were sampled from three communities (strata) they were weighted to develop population estimates for these three communities. In each analysis, the three primary outcomes were: self-rated health (continuous), dental health (continuous), and happiness (categorical). Although the self-rated health measure is often used in dichotomized format, contrasting "excellent," "very good," and "good" health with the remaining categories, responses were markedly skewed towards better health. Thus, the full range of the scale was used, with the top two categories of self-rated health combined. Happiness was categorized as: not happy, pretty happy and very happy.

Weighted linear regression models (unadjusted and adjusted) were used for continuous outcomes, logistic regression was used for dichotomous outcomes, and ordinal logistic regression was used for categorical outcomes. Because the terrorist bombing at the Boston marathon coincided with data collection, with 65% of respondents completing the survey before the bombing, and 35% afterward, we control for this using an indicator in the models as appropriate.

To examine neighborhood gradients in health, the predictor of primary interest was neighborhood, and adjusted models controlled for variables that may explain better health in less affluent neighborhoods. For example, Whites who reside in gentrifying neighborhoods with greater proportions of Black and Latino residents may have personal characteristics or beliefs that account for any observed health benefits. Thus, we controlled for age, physical activity, positive ratings of neighborhood, years lived in the neighborhood, perceived rent discrimination against Blacks, perceived racism against Blacks, political orientation, and survey completion date (whether or not they were completed before or after the terrorist attacks).

To examine subjective and objective social status effects on health, we conducted two separate analyses. In the first, the predictors of primary interest were the two operationalizations of neighborhood inequality and perceptions of Black welcome. Adjusted models controlled for age, gender, and relationship status, as well as objective indicators of status, including education, financial strain and tenure. Education was divided into three categories: less than a college degree, college degree, or more than a college degree. Relationship status was categorized into three groups: non-legal union, legal union, or no partner. In the second, the predictors of primary interest are income, subjective social status, and relative income differences, with adjusted models controlling for age and gender. We graph fitted regression lines by neighborhood to examine differences and stratify these lines by important covariates (e.g., own/rent, rent discrimination).

4. Results

4.1. Descriptive analyses

Out of a total project sample of $N = 900$, we focus here on the $N = 630$ respondents who identified as White, regardless of Latino or Hispanic ethnicity. The sample was 58% women, with a mean age of 45.28. Reflecting the affluence of the selected neighborhoods, the mean income was $73,732; education levels were high, with 61% earning more than a college degree, 28% a college degree, and only 11% having less than a college degree. Perceptions of social status varied by neighborhood. Overall, participants on average ranked their ladder position as 7.36 out of 10, with Jamaica Plain the lowest at 6.78. Notably, while participants in South End and Back Bay both saw themselves as slightly worse off than their neighbors on average (−0.019 and −1.08, respectively), Jamaica Plain respondents ranked themselves on average almost 1.5 rungs higher than their neighbors. With regard to perceptions of racism, participants described racism in general, and housing discrimination in particular, as something that affected Blacks only slightly, scoring between "somewhat" and "a little" on average. These views were inversely correlated with political orientation, with greater conservatism associated with lower perceived racism against Blacks. The sample mean of 2.96 indicates a "slightly liberal" political orientation. Finally, as noted earlier, self-rated health was skewed, with 94% falling in categories ranging from "good" to "excellent". Dental health was similarly skewed. Most (86%)

Table 2
Sample characteristics.

		Jamaica Plain	South End	Back Bay	Total
		$N = 156$	$N = 221$	$N = 253$	$N = 630$
Age		40.88 (1.23)	44 (.987)	49.06 (1.16)	45.28 (.666)
% Female		62%	49%	63%	57.95%
Income		55,283 (2762.9)	76,935 (2936.7)	83,332 (2749.4)	73,732 (1718.43)
Financial strain	Always has enough	63.2	74.8	81.3	74.43
	Sometimes does not have enough	30.3	22.5	16.2	21.99
	Often does not have enough	6.5	2.8	2.49	3.58
Self-rated health	Excellent	31.41	37.44	39.4	36.74
	Very Good	46.15	43.84	39.4	42.65
	Good	17.31	15.53	16.7	16.45
	Fair	4.49	3.2	3.98	4.15
	Poor	0.64	–	0.4	0
Dental health	Excellent	21.79	31.65	33.07	29.76
	Very Good	35.26	40.83	40.64	39.36
	Good	32.69	18.35	19.92	22.56
	Fair	7.69	6.88	4.78	6.24
	Poor	2.56	2.29	1.59	2.08
Physical Activity		2.80 (.158)	3.36 (.1419)	3.406 (.142)	3.24 (.0857)
Liking of neighborhood		3.65 (.055)	3.83 (.033)	3.92 (.020)	3.83 (.020)
Perceived rental discrimination against Blacks		2.675 (.0668)	2.375 (.059)	2.309 (.053)	2.425 (.0346)
Perceived racism against Blacks		2.888 (.0729)	2.489 (.055)	2.484 (.052)	2.587 (.0344)
Ladder rating		6.78 (.124)	7.324 (.1071)	7.746 (.0988)	7.355 (.0646)
Inequality		1.348 (.1458)	−.0189 (.134)	−1.08 (.1027)	−.102 (.082)
Welcome to Black families	Very welcome	50.65	38.64	34.7	40.32
	Somewhat welcome	13.64	19.55	23.5	19.68
	Indifferent/Somewhat unwelcome/ Not at all welcome	35.71	41.82	41.8	40
Education	Less than college	17.4	10.4	6.8	10.69
	College degree	25.8	33.5	24.7	28.07
	More than a college degree	56.8	56.1	68.5	61.24
Political orientation		2.448 (.109)	2.866 (.093)	3.35 (.0948)	2.96 (.0589)
Tenure	Own	47.7	56.8	57.9	55
	Rent	52.3	43.2	42.1	45
Relationship	No partner	34.6	38.5	35.5	36.3
	Non legal union	26.3	26.7	19.1	23.57
	Legal union	39.1	34.8	45.4	40.13
Happiness	Not happy	14.7	12.8	11.07	12.6
	Pretty happy	61.5	59.6	56.5	58.85
	Very happy	23.7	27.5	32.4	28.55

respondents described themselves as either "pretty happy" or "very happy". Table 2 summarizes mean values with standard errors, and proportions for categorical variables in the sample overall and by neighborhood.

4.2. Primary analyses

We first conducted weighted regression analyses to test whether living in neighborhoods with greater inequality was associated with better health, therefore showing an inverse social gradient. Results showed that in unadjusted models, though not statistically significant, self-rated health in the three neighborhoods followed a standard social gradient, with greater neighborhood affluence being associated with better health. For dental health, this gradient reached significance in unadjusted models, but no neighborhood effect was evident after adjusting for covariates. Similarly, the standard gradient was seen for happiness in unadjusted models; after adjustment, only positive ratings of the neighborhood were statistically significant (Table 3), with greater positivity associated with better health.

Second, we examined the relationship between health and perceived inequality and subjective social status. As shown in Table 4, and contrary to hypotheses, adjusted models of perceptions of living amongst neighbors who are lower in social status was not associated with health and happiness (only continuous operationalizations of inequality are shown). However, perceptions of the neighborhood as welcoming to Black families were consistently associated with better self-rated health, dental health, and happiness. Finally, Table 5 reports regression coefficients for associations between objective social status (individual income), controlling for subjective social status and covariates, and health outcomes. Here, higher incomes were beneficial for self-reported and dental health, but ladder rankings exerted a stronger effect. For happiness, only ladder rankings were significantly associated, with higher perceived rankings associated with greater cumulative odds of happiness. Relative differences in area median household income (MHI) were associated with self-rated health (overall MHI and White MHI) and dental health (White MHI), but not happiness (not shown in table).

4.3. Post-hoc analyses

To further illuminate the observed relationships between perceptions of welcome to Black families and health and happiness, we fit stratified regression models for each neighborhood. Given the complex survey design, we used domain regression analysis (subgroup analysis) to conduct stratified analysis in a weighted probability sample. We regressed self-rated health, dental health, and happiness on perceived Black welcome, controlling for age, subjective social status, gender, financial strain, education, and positive regard for neighborhood. In Back Bay, perceived welcome continued to be beneficial for happiness; in South End, perceived welcome was beneficial for all three outcomes; but in Jamaica Plain, perceived welcome was not statistically significant as a predictor

Table 3
Modeling social gradients in health across neighborhoods.

Neighborhood differences in self-rated health						
Explanatory variable	Model 1a (unadjusted)			Model 2a (adjusted)		
	B	95% C.I.		B	95% C.I.	
Back Bay	−0.1816	−0.383	0.019	0.107	−0.225	0.439
South End	−0.1750	−0.371	0.02	−0.155	−0.446	0.136
Jamaica Plain (reference)	0.0000	–	–	0.000	–	–
Physical activity				−0.102	−0.153	−0.051
Neighborhood positivity				−0.023	−0.238	0.192
Duration in residence				0.012	0.0004	0.023
Perceived rental discrimination				0.046	−0.127	0.219
Perceived group racism				0.064	−0.088	0.217
Age				0.001	−0.01	0.012
Political orientation				−0.011	−0.093	0.071
Survey completion pre-bomb				−0.009	−0.242	0.224
Survey completion post-bomb				0.000	–	–
Neighborhood differences in dental health						
Explanatory variable	Model 1b (unadjusted)			Model 2b (adjusted)		
	B	95% C.I.		B	95% C.I.	
Back Bay	−0.4420	−0.701	−0.183	0.048	−0.304	0.401
South End	−0.3360	−0.594	−0.079	−0.316		
Jamaica Plain (reference)	–	–	–	–	–	–
Physical activity				−0.062	−0.12	−0.003
Neighborhood positivity				−0.228	−0.517	0.061
Duration in residence				0.011	−0.006	0.028
Perceived rental discrimination				0.086	−0.078	0.251
Perceived group racism				−0.117	−0.303	0.069
Age				0.010	−0.001	0.022
Political orientation				−0.106	−0.206	0.006
Survey completion pre-bomb				−0.318	−0.62	−0.016
Survey completion post-bomb				–	–	–
Neighborhood differences in happiness						
Explanatory variable	Model 1c (unadjusted)			Model 2c (adjusted)		
	(Exp) B	95% C.I.		(Exp) B	95% C.I.	
Back Bay	2.39	1.47	3.89	1.3	0.581	2.91
South End	1.53	0.97	2.42	0.929	0.457	1.89
Jamaica Plain (reference)	–	–	–	–	–	–
Physical activity				1.10	0.939	1.29
Neighborhood positivity				2.20	1.07	4.54
Duration in residence				0.97	0.93	1.01
Perceived rental discrimination				0.86	0.589	1.26
Perceived group racism				1.15	0.766	1.72
Age				1.00	0.974	1.03
Political orientation				1.04	0.822	1.31
Survey completion pre-bomb				0.889	0.467	1.69
Survey completion post-bomb				–	–	–

for any outcome (coefficients not shown). The regression lines for these models are shown in Fig. 1. Graphing the association shows that Jamaica Plain differs from the other two neighborhoods in self-rated health, wherein perceptions of a welcoming environment to Black families do not confer the health benefits seen in the other two neighborhoods.

Because home ownership is a key axis around which White responses to Black neighbors have historically been organized (to cite a very few, see Hirsch, 1983; Kruse, 2005; Massey and Denton, 1993), we further stratified regression lines for self-rated health by owners and renters in each neighborhood, (Fig. 2). In Back Bay, all three outcomes improve for both owners and renters as perceptions of welcome to Black residents increase. Back Bay renters have a stronger slope and average level of happiness than individuals in the other neighborhoods. South End residents show the same patterns in general. In Jamaica Plain, dental health and happiness improve for both owners and renters. However, self-rated health depends on housing tenure in Jamaica Plain. Owners report slightly worsening health as their perceptions of welcome to Black families increase, unlike renters. And, both of Jamaica Plain's regression lines depart from the other two neighborhoods.

Finally, we investigated the possibility that salutary health effects of perceived Black welcome depend on beliefs about racism faced by Black people. If perceiving Black families as welcome in the neighborhood is beneficial, it may be because White residents recognize that Black homeseekers in Boston face discrimination. That is, individuals who perceive Black families as welcome therefore believe that the neighborhood in question stands apart from racist mores that may be characteristic of the rest of the city. In turn, this belief, engendering positive attitudes about the community, boosts health and well being. Therefore, we conducted one last exploratory post-hoc analysis, in which we graphed the regression in the three neighborhoods by perceptions of Black rental discrimination (Fig. 3). We split participants based on their response to how much discrimination Black renters face in Boston, grouping those who stated "None" and "Only a little" (low discrimination), and comparing them to those who endorsed "Some" or "A lot" (high discrimination). There was a negligible effect of perceived welcome on self-rated health for low

Table 4
Modeling perceived inequality, subjective social status, and health.

Self-rated health

	Inequality				Black welcome		
Explanatory variable	B	95% C.I.		Explanatory variable	B	95% C.I.	
Inequality	0.009	−0.032	0.049	Black families very welcome	−0.298	−0.453	−0.143
Age	0.009	0.005	0.015	Black families somewhat welcome	−0.165	−0.33	-0.0002
Male	0.054	−0.087	0.196	Black families not welcome/indifferent	–	–	–
Female	–	–	–	Age	0.012	0.007	0.017
Financial strain	0.175	0.005	0.344	Male	0.048	−0.088	0.185
More than a college degree	−0.039	−0.215	0.112	Female	–	–	–
Less than a college degree	0.295	−0.034	−0.597	Financial strain	0.179	0.011	0.349
College degree	–	–	–	More than a college degree	−0.063	−0.22	0.095
Home owners	−0.193	0.351	−0.032	Less than a college degree	0.314	0.008	0.622
Renters	–	–	–	College degree	–	–	–
Legal union with partner	−0.142	−0.312	0.036	Home owners	−0.204	−0.355	−0.052
No partner	0.075	−0.111	0.286	Renters	–	–	–
Non-legal union	–	–	–	Legal union with partner	−0.109	−0.285	0.066
				No partner	0.072	−0.121	0.265
				Non-legal union	–	–	–

Dental health

	Inequality				Black welcome		
Explanatory variable	B	95% C.I.		Explanatory variable	B	95% C.I.	
Inequality	0.017	−0.031	0.066	Black families very welcome	−0.251	−0.436	−0.067
Age	0.004	−0.003	0.01	Black families somewhat welcome	−0.048	−0.289	0.194
Male	0.096	−0.076	0.268	Black families not welcome/indifferent	–	–	–
Female	–	–	–	Age	0.004	−0.003	0.011
Financial strain	0.355	0.161	0.549	Male	0.087	−0.086	0.259
More than a college degree	−0.088	−0.273	0.098	Female	–	–	–
Less than a college degree	0.572	0.126	1.020	Financial strain	0.356	0.173	0.537
College degree	–	–	–	More than a college degree	−0.091	−0.272	0.091
Home owners	−0.144	−0.362	0.075	Less than a college degree	0.641	0.197	1.090
Renters	–	–	–	College degree	–	–	–
Legal union with partner	0.038	−0.201	0.278	Home owners	−0.162	−0.372	0.047
No partner	0.099	−0.151	0.348	Renters	–	–	–
Non-legal union	–	–	–	Legal union with partner	0.071	−0.162	0.304
				No partner	0.087	−0.157	0.332
				Non-legal union	–	–	–

Happiness

	Inequality				Black welcome		
Explanatory variable	(Exp) B	95% C.I.		Explanatory variable	(Exp) B	95% C.I.	
Inequality	1.03	0.941	1.14	Black families very welcome	–	–	–
Age	0.998	0.984	1.01	Black families somewhat welcome	0.828	0.492	1.39
Male	0.884	0.595	1.31	Black families not welcome/indifferent	.423	0.268	0.668
Female	–	–	–	Age	0.993	0.979	1.010
Financial strain	0.336	0.222	0.509	Male	0.883	0.59	1.320
More than a college degree	–	–	–	Female	–	–	–
Less than a college degree	0.738	0.355	1.530	Financial strain	0.315	0.205	0.483
College degree	1.510	0.969	2.360	More than a college degree	–	–	–
Home owners	0.908	0.575	1.440	Less than a college degree	0.583	0.269	1.260
Renters	–	–	–	College degree	1.399	0.908	2.160
Legal union with partner	1.377	0.775	2.450	Home owners	1.040	0.651	1.650
No partner	0.392	0.226	0.678	Renters	–	–	–
Non-legal union	-	-	-	Legal union with partner	1.230	0.697	2.170
				No partner	0.416	0.241	0.715
				Non-legal union	–	–	–

discrimination Back Bay and Jamaica Plain residents, whereas South End counterparts continue to enjoy better health. However, as shown in panel 3a, for high discrimination respondents, the effects of perceived welcome on self-rated health vary dramatically by neighborhood. Both South End and Back Bay experience better health, with varying slopes. In contrast, Jamaica Plain residents report worse health as they perceive their neighborhood to be more welcoming to Black families.

Table 5
Modeling objective and subjective social status and health.

	Self-rated health			Dental health			Happiness		
Explanatory variable	B	95% C.I.		B	95% C.I.		(Exp) B	95% C.I.	
Income	−0.003	-0.005	−0.007	−0.0033	−0.006	-0.0005	1.003	0.997	1.009
Ladder ranking	−0.106	−0.162	−0.05	−0.141	−0.211	−0.07	1.607	1.37	1.89
Age	0.009	0.005	0.015	.006	−0.0006	0.012	.987	0.974	1.001
Female	−0.053	−0.208	1.020	−0.137	−0.332	0.057	0.842	0.548	1.300
Male	–	–	–	–	–	–	–	–	–

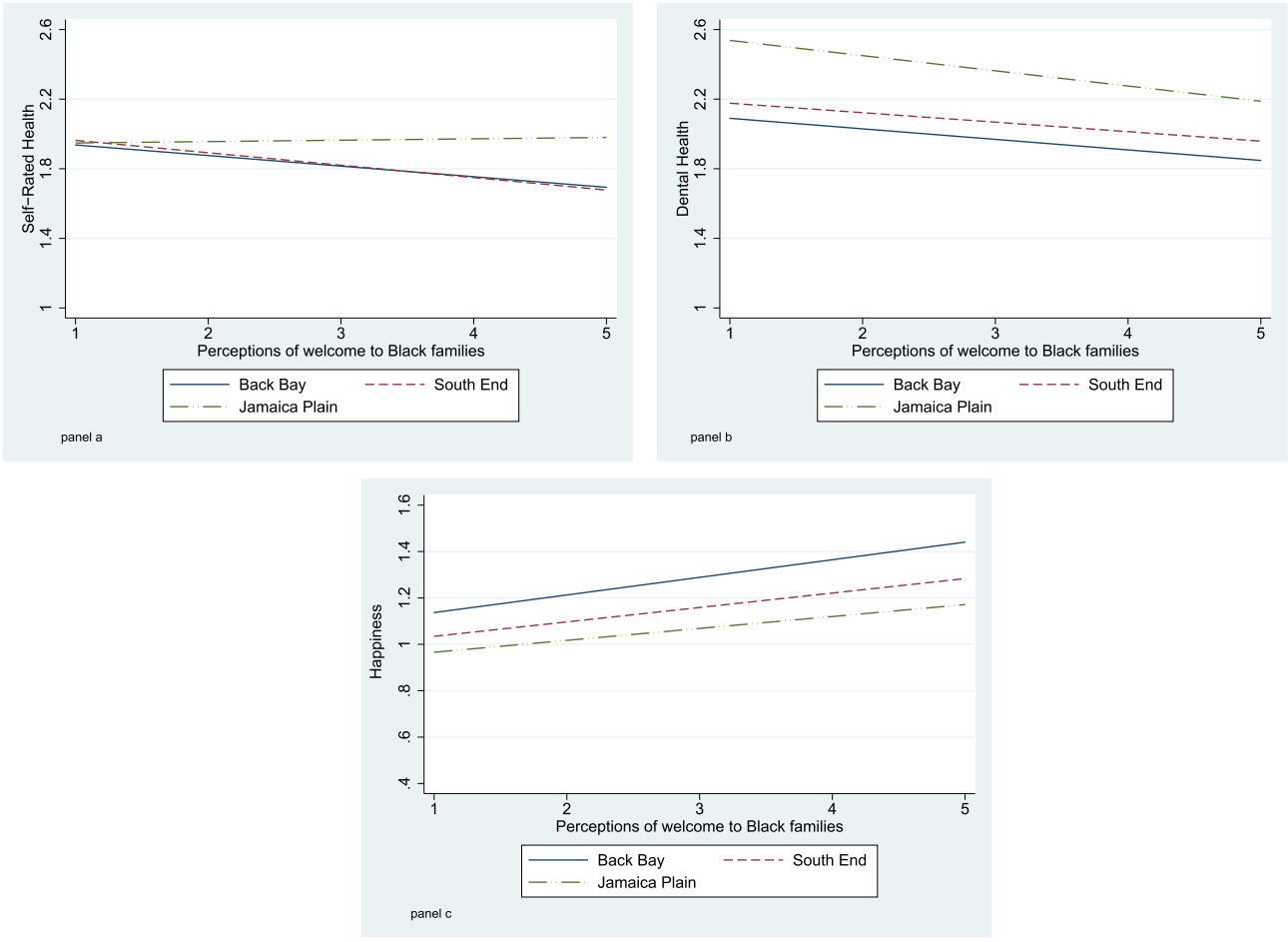

Fig. 1. Relationship between perceived neighborhood welcome to Black families and health outcomes (self-rated health, dental health, and happiness). Values for self-rated health ranged from 1 to 4; dental health from 1 to 5; and happiness from 0 to 2. For both self-rated health and dental health, lower scores are better.

5. Discussion

We asked whether perceptions of inequality and subjective and objective social status affected the health of White residents in three Boston neighborhoods differentiated by race, ethnicity and socioeconomic status. Based on previous research reporting that nationally, Whites enjoy the best absolute levels of health in metropolises with the highest Black–White health disparities, we explored whether living in more unequal environments would be beneficial for the health of White Bostonians. Findings can be summarized as follows. First, the data did not support the hypothesis that neighborhood health would follow an inverse gradient. Unadjusted analyses revealed that even among a sample of White respondents that could be described as rich, richer and richest, health followed a standard gradient, with those in Back Bay reporting the best health, those in Jamaica Plain the lowest levels (though still healthy overall) and South End in the middle. However, neighborhood residence was not associated with health in fully adjusted models. If a reverse gradient does exist in the population, it is possible that it is undetectable at the geographic scale of neighborhoods within a city, compared to the metropolitan statistical areas used in Subramanian's study. Second, concordant with other research (Singh-Manoux et al., 2005), although objective measures of socioeconomic status were associated with better health (self-rated and dental), controlling for subjective measures using ladder rankings revealed the latter to be more strongly associated.

Third, an unanticipated finding suggested that some White residents who perceive Black families as welcome in their (predominantly White) neighborhoods enjoyed better health than those who believed them to be less welcome. Responses to this question may be interpreted in several ways. First, the question may elicit basic assessments of the perceived discriminatory tendencies of neighbors in the community. However, the data contradict this interpretation, in that perceived group racism and rental discrimination were not correlated with perceived welcome. Second, participants may respond to what they perceive to be the racial composition in the neighborhood; if they perceive a high number of Black residents, they report that neighbors would be more welcoming. Given that actual proportions of Black people are low in all three neighborhoods, perceptions of welcome are not based on objective conditions. Perhaps more likely is that the question acts more so as a measure of sensitivity to having Black neighbors. Third, the item may pull for participants' own receptivity to Black neighbors. While most respondents would be reticent to express rejection of Black neighbors, those sentiments may be safely projected onto neighbors. Fourth, the question may assess evaluative judgments about White neighbors rather than attitudes towards Blacks. For example, individuals who report that Black families would be welcome may be reporting that they perceive their neighbors to be racially egalitarian or socially liberal in general.

Although perceived Black welcome may have different meanings, it is clear that associations between perceptions of inequality and health vary by social position, suggestive of the

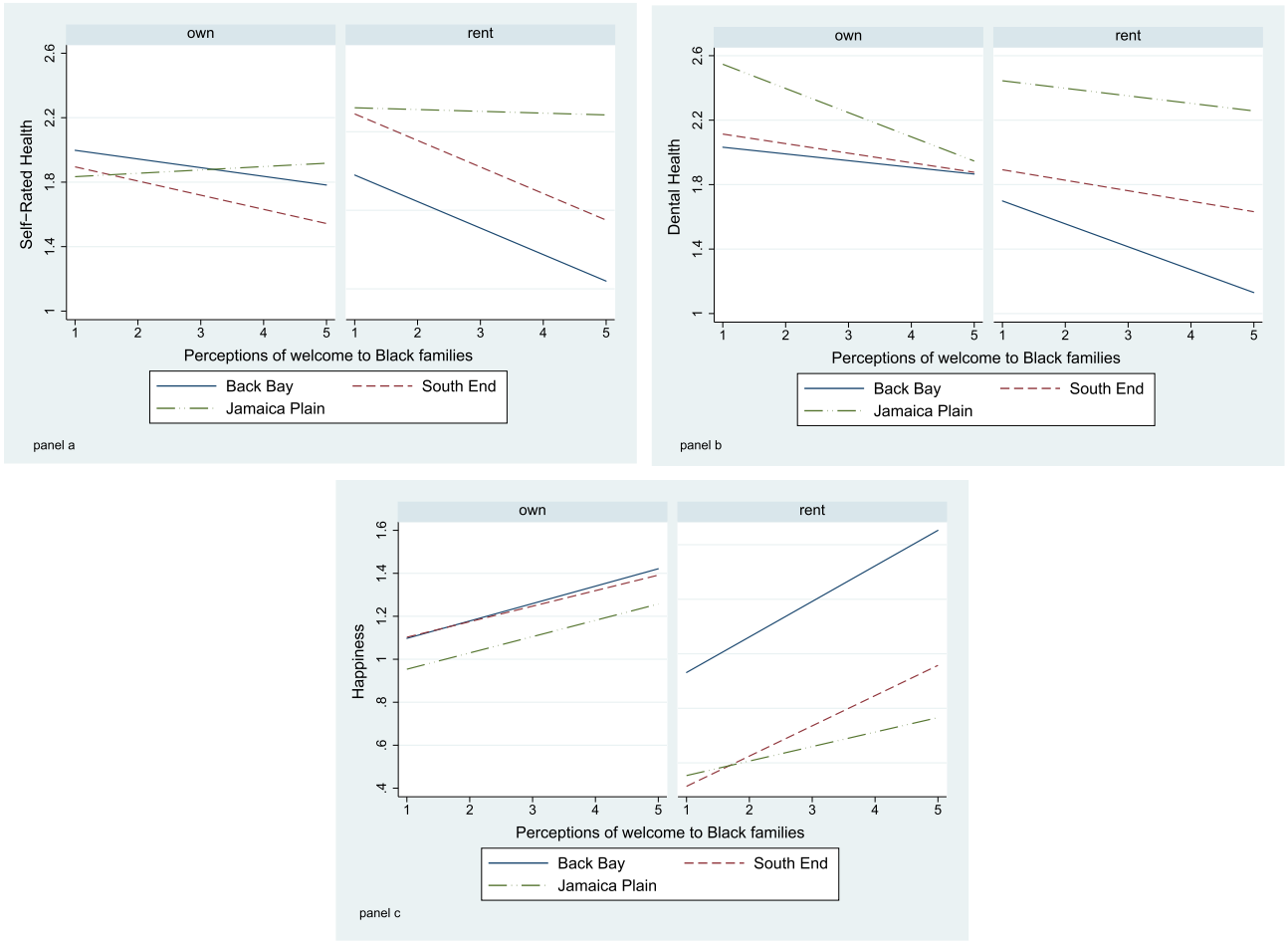

Fig. 2. Relationship between perceived neighborhood welcome to Black families and health outcomes (self-rated health, dental health, and happiness), stratified by respondent's housing tenure (owner vs. renter). Values for self-rated health ranged from 1 to 4; dental health from 1 to 5; and happiness from 0 to 2. For both self-rated health and dental health, lower scores are better.

ways in which health benefits may be refracted through White privilege. Consider the extremely low percentages of Black residents in Back Bay and the low and declining percentages in South End. To perceive Black families as welcomed in these neighborhoods stands in stark contrast to the community demographics. These perceptions may therefore benefit health because from a position of exclusionary White space, perceiving Black residents as welcome continues to mask White privilege. From this perspective, if Black families are welcome, and yet very few actually live in the neighborhood, White residents might assume this merely reflects an unbiased housing market stratified by differential choices and economic resources. Krysan and Farley (2002) and others have shown that Whites strongly prefer neighborhoods where they are the distinct majority. However, those preferences are rarely stated explicitly as racial: "Most important reason, I guess, was because I was snobby and I wanted a snobbier neighborhood. And I'm ashamed to admit that, but I guess that's the truth" (Shapiro, 2005) p. 136. Such statements recast residential segregation as a guilty preference for refined tastes; racial exclusion is unacknowledged. According to Shapiro, most Whites explain Black disadvantage in cultural, moral and character terms. Thus, perhaps in the present study, very affluent Whites who believe Blacks are welcome remain secure in their belief that their community is egalitarian, concomitant with an unthreatened position at the top of the social hierarchy.

In contrast, in Jamaica Plain, perceptions of Black welcome either did not confer the health benefits seen in the other two communities, or it was associated with *poorer* self-rated health. These associations persisted across subgroups defined by housing tenure and perceptions of housing discrimination encountered by Black city dwellers. It is unclear why this pattern emerged for self-rated health, but not dental health or happiness; but the consistent patterning supports the possibility that White privilege is a factor. Note that Jamaica Plain ranks lowest in objective social status (lowest median income), and subjective social status (ladder ratings). And, the neighborhood has the largest proportions of Black residents—percentages that are also increasing, unlike the other areas. Thus, perceiving Black families as welcome is concordant with area demographics. In this context, high perceptions of Black welcome may be related to poorer health because the neighborhood environment upsets expected benefits stemming from whiteness.

If exclusionary White space is one of the settled expectations of White Americans, Jamaica Plain's relative social status may render a more precarious White identity, therefore increasing stress and causing health decrements. We may see evidence of this in the differing impact of perceived Black welcome for owners, compared to renters—who may be more transient or less invested in the community—and in Jamaica Plain's departure from the other two neighborhoods. This was true as well for those who endorsed rental

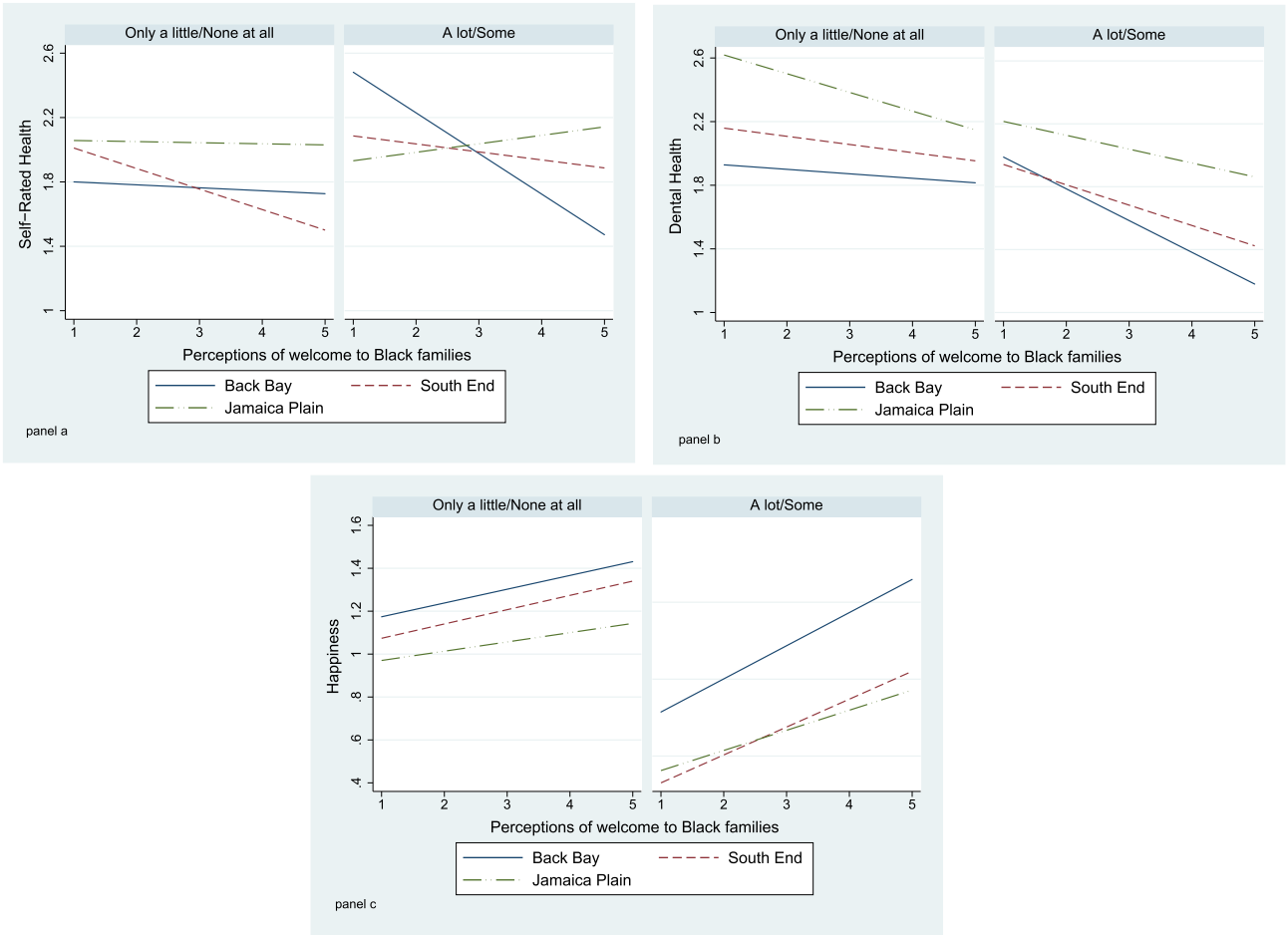

Fig. 3. Relationship between perceived neighborhood welcome to Black families and health outcomes (self-rated health, dental health, and happiness), stratified by respondent's perceptions of the extent of housing discrimination faced by Black Bostonians (little to none vs. some or a lot). Values for self-rated health ranged from 1 to 4; dental health from 1 to 5; and happiness from 0 to 2. For both self-rated health and dental health, lower scores are better.

discrimination as a fact of life for Black Bostonians. If Black homeseekers face discrimination in the city, but are nonetheless welcome in Jamaica Plain, this construes the neighborhood as a racial outlier. Whites who reside in this community do not enjoy the same return on racial exclusivity for their racial classification that their counterparts in other areas do; and as such, they experience health decrements that were absent in Back Bay and South End.

5.1. Limitations and directions for future research

Some study limitations should be noted. First, as is true for most mail surveys, response rates were relatively low, tempering our ability to generalize to the Boston population. The education, income and homeowner levels in the sample were higher than would be expected given extant statistics (Boston Public Health Commission Research Office, 2013). The proportions of individuals in good health were also high, with less than 5% reporting fair or poor health. This precluded our using dichotomized outcomes, and thus prevents comparisons to other studies. Research on the test-retest reliability of the self-rated health item suggests that reliability is strongest among Whites and those with higher education levels, but that "Excellent" is the least stable of the five levels, with 52% of respondents selecting a different level only one month later (Zajacova and Dowd, 2011). Other studies should investigate associations between perceived inequality and health in a sample with greater diversity in health status. Our study was cross-sectional; longitudinal designs should assess how inequality affects health over time, and whether they persist over changes in health status reports. Finally, sample size (e.g., at the neighborhood level) could have limited power to test hypotheses.

More research is needed to unpack the perceptions of Black families being welcome in the neighborhood. Among at least some White Bostonians, awareness is low that expressing racism is in poor taste; but when expressed, racism often takes shape in veiled concerns about neighborhood composition. In these circumstances, residents "most clearly and consistently experience whiteness … as a tenuous privilege that must be defended in neighborhoods, schools, and jobs" (McDermott, 2006, p. 55).

Although Boston was ideal as a setting for our research questions, it does have unique characteristics. Despite its status as a major U.S. city, it is relatively small both in population and geography, has a dense pedestrian scale that encourages walking and a strong public transit network. Thus, despite high levels of residential segregation, social contact or interaction may shape attitudes about and perceptions of inequality in ways that differ from cities with larger populations, greater sprawl, and more reliance on automobiles. Additionally, Boston's location at the northern end of the Northeast corridor (stretching from Boston to Washington, DC), a highly interconnected region with several of the country's most populous cities, and one with a decidedly liberal orientation, means that inequality and health might be patterned quite differently than

in other regions. Boston has a higher proportion of White residents than many large cities, particularly those in the Northeast corridor. Race may therefore have unique inflections in the lives of Boston residents, and future studies should examine how our findings play out in other metropolitan contexts. Finally, our interpretations about the role of White privilege in health outcomes are preliminary, but an important first step in looking at the other side of disadvantage and health. Further research is needed to drill down into perceptions of racially coded social status among Whites in urban and suburban settings.

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