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Ethnic density effects on health and experienced racism among Caribbean people in the US and England: A cross-national comparison

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Abstract

Studies indicate an ethnic density effect, whereby an increase in the proportion of racial/ethnic minority people in an area is associated with reduced morbidity among its residents, though evidence is varied. Discrepancies may arise due to differences in the reasons for and periods of migration, and socioeconomic profiles of the racial/ethnic groups and the places where they live. It is important to increase our understanding of how these factors might promote or mitigate ethnic density effects. Cross-national comparative analyses might help in this respect, as they provide greater heterogeneity in historical and contemporary characteristics in the populations of interest, and it is when we consider this heterogeneity in the contexts of peoples' lives that we can more fully understand how social conditions and neighbourhood environments influence the health of migrant and racial/ethnic minority populations.

This study analysed two cross-sectional nationally representative surveys, in the US and in England, to explore and contrast the association between two ethnic density measures (black and Caribbean ethnic density) and health and experienced racism among Caribbean people. Results of multilevel logistic regressions show that nominally similar measures of ethnic density perform differently across health outcomes and measures of experienced racism in the two countries. In the US, increased Caribbean ethnic density was associated with improved health and decreased experienced racism, but the opposite was observed in England. On the other hand, increased black ethnic density was associated with improved health and decreased experienced racism of Caribbean English (results not statistically significant), but not of Caribbean Americans. By comparing mutually adjusted Caribbean and black ethnic density effects in the US and England, this study examined the social construction of race and ethnicity as it depends on the racialised and stigmatised meaning attributed to it, and the association that these different racialised identities have on health.

Keywords

Ethnic density; Race; Migration; Place; Racism; Caribbean; Black; USA; England; UK

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Introduction

There have been significant levels of migration from the Caribbean to Europe and North America since the 1880s (Goulbourne & Solomos, 2004). Comparative studies of Caribbean migrants who have settled in different countries show that the contemporary situation of Caribbean ethnic communities in their host countries depend as strongly on the social context that received them as on the skills and motivations that the migrants arrived with (Portes & Grosfoguel, 1994). Understanding the context of specific migrant populations is important (Williams, Mohammed, Leavell, & Collins, 2010), but unfortunately most research on migrant and second generation integration has been conducted within a single nation state (with the vast majority done in the United States), with little comparative analysis (Waters, 2010). The only study that to our knowledge has compared health inequalities and socioeconomic circumstances of US and English black Caribbeans showed marked differences in health and socioeconomic markers between black Caribbean people in the US and in England, whereby the former group had better health than their English counterparts (Nazroo, Jackson, Karlsen, & Torres, 2007). Framing these findings in the context of migration differences between the two Caribbean populations suggested that results were driven by differences in available opportunities in the destination countries (Nazroo et al., 2007), since Caribbean migration to the US happened at a time when migrants were able to take advantage of the civil rights movement in a way that the pre-existing African American population and the black Caribbean population in the UK were not. In fact, Caribbean migrants to the UK migrated to England as labour migrants after World War II in the face of considerable hostility from some of the English population (Nazroo et al., 2007). Although the study by Nazroo and colleagues is the first cross-national study to examine how the context of migration and post-migration circumstances influence the health of black Caribbean groups in the US and England (Nazroo et al., 2007), its results were limited by a lack of consideration given to the role of neighbourhood in patterning health profiles across populations. Living in deprived neighbourhoods has been associated with increased mortality and morbidity, independent of individual-level attributes (Pickett & Pearl, 2001; Riva, Gauvin, & Barnett, 2007), and it is now well established that racial/ethnic minorities in both the US and England are more likely than their white counterparts to be residentially concentrated in the most deprived neighbourhoods (Karlsen, Nazroo, & Stephenson, 2002; Massey & Denton, 1993). However, when the detrimental association between concentrated neighbourhood deprivation and health is accounted for, and focus is placed on the association between living among other ethnic minority people and health, neighbourhoods with high levels of racial/ethnic minority concentration have been found to provide its residents with protective effects on health through the ethnic density effect, which posits that as the proportion of an ethnic minority group in a neighbourhood increases, their health complications will decrease (Halpern & Nazroo, 2000). Theoretical discourses of the ethnic density effect propose that positive health outcomes are attributed to the protective and buffering effects that enhanced social cohesion, mutual social support and a stronger sense of community and belongingness provide from the direct or indirect consequences discrimination and racial harassment (Bécares, Nazroo, & Stafford, 2009; Halpern & Nazroo, 2000; Smaje, 1995). Several studies have examined the effects of ethnic

density on health, with some studies finding a protective ethnic density effect, and others reporting a detrimental or null association. The evidence for or against ethnic density effects varies depending on the ethnic minority group analysed, and on the measure of health examined. For example, studies that have explored the association between ethnic density and self-rated health among US and English black populations have all reported null associations (Bécares et al., 2009; Karlsen et al., 2002; Mellor & Milyo, 2004; Pickett, Shaw, Atkin, Kiernan, & Wilkinson, 2009; Robert & Ruel, 2006; Usher, 2007; White & Borrell, 2006), and although English studies have differentiated between black African and black Caribbean groups (Bécares et al., 2009; Karlsen et al., 2002; Pickett et al., 2009), none of the studies conducted in the US have considered ethnic group differences among black populations. Other markers of physical morbidity, such as hypertension, have received less attention, with no English studies focussing on this outcome, and only one study in the US examining black ethnic density effects on hypertension, which reported a null association (Cozier et al., 2007). More consistent ethnic density effects have been found for mental health outcomes, including suicide. Two studies have explored ethnic density effects on suicide-related outcomes among black people in the UK; one found a trend for a protective effect of black ethnic density on suicide as most probable cause of unnatural death (Neeleman & Wessely, 1999), and the other reported protective ethnic density effects on deliberate self-harm (Neeleman, Wilson-Jones, & Wessely, 2001). To date, no studies have examined the association between suicide and ethnic density in the US.

Discrepancies in ethnic density effects may arise due to differences in the countries of origin of the predominant minority groups, reasons for migration, and differences in the cultural, economic and demographic profiles of both the ethnic groups and the places where they live. It is important to increase our understanding of how these factors might promote or mitigate ethnic density effects, and one useful way of achieving greater insight into the mechanisms behind ethnic density is through cross-national comparisons of ethnic density effects. Cross-national comparative analyses provide greater heterogeneity in historical and contemporary characteristics in the populations of interest, and it is when we consider this heterogeneity in the contexts of peoples' lives that we can more fully understand how social conditions and processes such as neighbourhood environments, including ethnic density, influence the health of migrant and ethnic minority populations.

The US and England differ in key processes that shape the "context of reception" in which migrants arrive (Nazroo et al., 2007), including motivations for and patterns of migration, both historical and contemporary ethnic relations, and the extent and nature of racial/ethnic residential segregation. This latter process is particularly relevant to cross-national comparisons of ethnic density effects given the importance that analytical power obtained from the range of ethnic density has been found to have in detecting ethnic density effects (Shaw et al., in press). Levels of residential concentration vary greatly in the US and England (Peach, 1999), and particularly for British black Caribbean people who are one of the least concentrated racial/ethnic groups. One might thus expect ethnic density effects to differ across these two national contexts given methodological and contextual differences. Health researchers have been encouraged to pay attention to the ways in which segregation may affect the health of black migrants (Williams et al., 2010), and so cross-national comparisons of Caribbean migrants to the US and England should incorporate existent

evidence on neighbourhood effects on health, and examine how ethnic density theories relate to the health patterning of Caribbean groups in both contexts.

Experiences of racial harassment and discrimination are also encompassed within this concept of "context of reception," as they result from the socialisation of migrant populations into racialised ethnic identities that reflect historical and current racial/ethnic relations. Black Caribbean migrants, given that they are both black and migrant, have been suggested to face more pressures and inequalities compared with native blacks or white migrants (Williams et al., 2007). Studies in the UK showan association between increased ethnic density and decreased experiences of racism (Bécares et al., 2009; Stafford, Bécares, & Nazroo, 2010), and an indication of a reduction in the detrimental association between racism and health as ethnic density increases, but to the best of our knowledge no study to date has examined whether this applies in the US.

Entry into a hostile national climate can adversely affect the well being of migrant groups (Williams et al., 2010), and cross-national studies seeking to understand the patterning of health across racial/ethnic groups in different countries should pay attention to factors that might be included under the concept of "context of reception" as explanatory variables in health outcomes (Nazroo et al., 2007), including ethnic density and experienced racism. The present study aims to examine and compare ethnic density effects among US black Caribbean (hereon: Caribbean American) and British black Caribbean (hereon: Caribbean English) in order to: 1) examine whether experiences of Caribbean American and Caribbean English differ in terms of ethnic density effects on health; 2) examine whether increased ethnic density is associated with decreased experiences of racism among Caribbean people in the US, and whether it differs from that of their English counterparts; and 3) explore whether a buffering effect of ethnic density exists in the association between racism and health, in other words, whether the detrimental association between experienced racism and poor health is reduced in neighbourhoods of high ethnic density.

Methods

Data

This study uses data from two comparable nationally representative surveys: the National Survey of American Life (NSAL; ICPSR, 2007), and the Ethnic Minority Psychiatric Illness Rates in the Community Study (EMPIRIC; National Centre for Social Research & University College London, 2003). NSAL, which provides data for the US context, is a nationally representative household study of African Americans and Caribbean blacks with a national sample of non-Hispanic whites who live in areas with at least 10% African American residents (Jackson et al., 2004). Data were collected between February 2001 to June 2003 using a national multistage probability design. A total of 6082 face-to-face interviews took place with persons aged 18 or older (72.3% response rate), including 3570 African Americans, 891 non-Hispanic Whites, and 1621 blacks of Caribbean descent (Heeringa, Torres, Sweetman, & Baser, 2006). The black Caribbean sample was selected from two area probability sample frames: the core NSAL sample (a nationally representative sample of households located in the 48 contiguous states with at least 1 black adult 18 years and older), and an area probability sample of housing units from areas with a relatively high

Caribbean density (more than 10% of the population). Of the 1621 black Caribbean respondents, 265 were selected from the households in the core sample, whereas 1356 were selected from housing units from high density Caribbean areas (Jackson et al., 2004).

English data were drawn from EMPIRIC, a cross-sectional, nationally representative follow-up study of a subsample of ethnic minority people from the 1999 Health Survey for England (HSE). The 1999 HSE was comprised of a general population sample of 7798 respondents, selected from about 6500 addresses in 312 postcodes. All adults in the selected households were surveyed, as well as children older than two. If there were more than two children in the household, two were randomly selected for inclusion (Erens, Primatesta, & Prior, 2001). The ethnic minority boost sample, comprised of 5487 respondents, was selected from over 64,000 addresses in 340 postal sectors. Among all eligible ethnic minority informants at an address, a maximum of four adults and three children were selected to be interviewed, using a random selection procedure (Erens et al., 2001). The EMPIRIC survey included all 1999 HSE informants aged 16–74 years from the black Caribbean, Indian, Pakistani, Bangladeshi and Irish ethnic groups who agreed to be recontacted (92% response rate), and collected additional information on mental health, ethnic identity and experiences and perceptions of racism and discrimination (Sproston & Nazroo, 2002).

Both the NSAL and EMPIRIC datasets were linked to the census (2000 US Census and 2001 UK Census respectively) in order to obtain data on racial/ethnic residential concentration and area deprivation. US data on area deprivation and racial/ethnic composition were obtained from the 2000 US Census and were linked, via special licence access, to NSAL data by means of census tract Federal Information Processing Standards codes. Census tracts typically have between 2000 and 8000 people, with an average size of about 4000, and were designed to be homogeneous with respect to population characteristics, economic status, and living conditions (US Census Bureau, 2005).

English data on ethnic residential concentration were linked from the 2001 UK Census via participants' postcodes. Middle Super Output Areas (MSOAs) were used to define area boundaries, and were the lowest level of dis-aggregation that was permissible given identifiability constraints. MSOAs are the middle layer of geographical Output Areas designed by the Office of National Statistics (ONS) for the collection and publication of small area statistics. In England, they were designed to have similar population sizes and be socially homogenous (ONS, 2007). There are 7193 MSOAs in England and Wales, with a minimum population of 5,000, and an average population of 7200. Permission to link the 2001 census data to EMPIRIC was approved by the ethics committee of the data holder (the National Centre for Social Research) with the constraint that up to 5% random error be added to the ethnic density variable in order to protect confidentiality of respondents, resulting in a correlation between the perturbed and original variables of 0.975. This additional random error reduced the precision of the estimates, but it did not bias them.

The definition of geographical units used to examine neighbourhood effects can be a determining element in cross-national comparisons, so measures of neighbourhood need to be analogous across countries. English MSOAs and US Census tracts are area definitions commonly used in prior research (see for example Mason, Messer, Laraia, & Mendola,

2009; Shaw, Pickett, & Wilkinson, 2010 in the US, and Bécares et al., 2009; Stafford, Bécares, & Nazroo, 2009 in the UK), and have been shown to be comparable geographical units in terms of population size (Iceland, Mateos, & Sharp, 2011).

Individual-level measures

Three health measures were selected to examine ethnic density effects in the US and England: suicidal ideation, a measure of mental distress; hypertension, a major risk factor for cardiovascular disease; and self-rated health, which has been shown to be a valid indicator of health status and has been associated with higher mortality, psychological distress, and poor functioning (Idler & Benyamini, 1997; Wannamethee & Shaper, 1991). Hypertension and self-rated health have been used by previous comparative analyses of Caribbean populations in the US and England (Nazroo et al., 2007), so we have selected these two measures to extend and complement previous work. Ethnic density has been hypothesised to buffer and protect people from the potentially pathogenic influence of stressful events (Bécares et al., 2009), and all of these outcomes have been linked to stress (Feskanich et al., 2002; Vihjalmsson, Krisjansdottir, & Sveinbjarnardottir, 1992; Williams & Neighbors, 2001), thus providing ideal health measures to examine cross-national ethnic density effects.

Suicidal ideation was asked in both surveys, although the framing of the questions varied slightly. In NSAL, respondents were asked “Have you ever seriously thought about committing suicide?” whereas EMPIRIC respondents were asked “Have you ever thought of taking your life, even if you would not really do it?”

Hypertension was measured in both the NSAL and EMPIRIC surveys by asking respondents whether they had been diagnosed by a doctor with ‘hypertension or high blood pressure.’

Self-rated health was captured differently in both surveys. In NSAL, respondents were asked: ‘How would you rate your overall physical health at the present time? Would you say it is excellent, very good, good, fair or poor?’ EMPIRIC respondents were asked: ‘In general, would you say your health is excellent, very good, good, fair or poor?’ For these analyses, NSAL respondents are coded according to whether they had responded ‘excellent’, ‘very good’ or ‘good’, as opposed to those responding ‘fair’ or ‘poor’. The EMPIRIC sample was grouped according to whether respondents had responded ‘excellent’ or ‘very good’, as opposed to those responding ‘fair’, ‘bad’ or ‘very bad’. These categorisations, used in the previous comparative study (Nazroo et al., 2007), adequately reflect differences in the relative position of the two Caribbean groups within their countries, and are not sensitive to reporting bias between countries (Nazroo et al., 2007).

Individual socioeconomic status (SES) was measured using equivalised household income, employment status, and education, three key variables previously used in US-England comparative analyses (Banks, Marmot, Oldield, & Smith, 2006; Nazroo et al., 2007). In both countries, household income was equivalised using a modified OECD Equivalence Scale, which allows 1.0 for the first adult in the household, 0.5 for other adults and 0.3 for children under 17. Equivalised income was calculated by dividing household disposable income (income after taxes and transfers) by the equivalence score for the household. Equivalised

household income was divided into five equally sized income quintiles so that one fifth of the populations included in the study is in each group.

Employment status was categorised in both samples as ‘employed or in fulltime education’, ‘unemployed’, ‘unemployed due to long term sickness’, ‘looking after the home’ and ‘retired’.

Given cross-national differences in educational systems, a comparable measure of education was created by recoding years of education into three categories. In the US, education was categorised into ‘high school or less (0–12 years)’, ‘more than high school but not a college graduate (13–15 years)’, and ‘college or more (+16 years).’ In England, categories consisted of ‘less than O-level or equivalent (0–11 years),’ ‘A-level qualifications or equivalent (12–13 years),’ and ‘higher educational qualifications (+13 years).’

Race/ethnicity was self-ascribed in both surveys. In order to participate in the NSAL study it was necessary for respondents to self-identify their race as black. Those self-identifying as black were classified as black Caribbean if (a) they answered affirmatively when asked if they were of West Indian or Caribbean descent, (b) they said they were from a country included on a list of Caribbean area countries presented by the interviewer, or (c) they indicated that their parents or grandparents had been born in a Caribbean area country (Jackson et al., 2004). Ethnicity in EMPIRIC was defined by self-assessment using the same categories as the 1991 Census (OPCS, 1992). For the purpose of the present study, we have altered the labelling of ethnic groups from those used in the original surveys; to clearly distinguish national origin we refer to ‘Caribbean American’ and ‘Caribbean English.’

Both surveys provided information on respondents’ experiences of racism and discrimination, covering experiences of verbal insults, threats or harassment; unfair treatment at work; or refusal of employment based on racial/ethnic background. In NSAL, the questions explored whether the respondent experienced verbal insults or name calling and/or was threatened or harassed in the ‘day-to-day life almost everyday, at least once a week, a few times a month, a few times a year or less than once a year?’. These variables were combined into one measure of whether the respondent had experienced either form of insult more frequently than ‘less than once a year’ and with the respondent attributing this to his/her ancestry, race or skin colour in response to a follow-up question. This coding allowed comparability with EMPIRIC, which asked respondents ‘In the last twelve months, has anyone insulted you for reasons to do with your ethnicity? By insulted I mean verbally abused, threatened or been a nuisance to you.’ Experiences of discrimination in employment were measured in NSAL by asking respondents ‘have you ever been unfairly denied a promotion?’ And, ‘For unfair reasons, have you ever not been hired for a job?’ Only cases where the respondent attributed the behaviour to their ancestry, race or skin colour were included. In EMPIRIC, respondents were asked: ‘Have you yourself ever been treated unfairly at work with regard to promotion or a move to a better position for reasons which you think were to do with race, colour or your religious or ethnic background? (I don’t mean when applying for a new job.)’ And: ‘Have you ever been refused a job for reasons which you think were to do with your race, colour or your religious or ethnic background?’

Other individual-level factors used in the analysis included age, sex, nativity (US/UK vs. foreign born), and marital status.

Area-level measures

Area-level data, linked from the US and UK Censuses, included measures of area deprivation and ethnic density. To assess area deprivation in NSAL we created a factor with four indicators of area-level socioeconomic disadvantage, which included percent of persons with income less than 100% of federal poverty level, percent of persons aged 25 years and over with less than high school level of education, median household income, and percent households receiving public assistance. Exploratory factor analysis was used to summarise area-level SES variables and indicated that the four measures were captured by a single factor, with higher scores representing higher deprivation. As a measure of area deprivation in the English context, the Index of Multiple Deprivation (IMD) summary score was used. The IMD is a measure of multiple deprivation based on a weighted cumulative model of seven individual domains from which it is composed, assessing income; employment disadvantage; health deprivation and disability; education, skills and training; poor access to housing and services; indoor and outdoor living environment; and crime levels (Noble et al., 2004). IMD data were available as quintiles for analysis, quintile 1 representing the most affluent, and quintile 5 most deprived. Area-level deprivation measures for both NSAL and EMPIRIC were created using complete survey populations, not only the Caribbean samples, in order to capture the level of deprivation of the two Caribbean samples within the general population that encompasses them. Neighbourhood deprivation is presented as quintiles in descriptive results, but in models was analysed as a continuous variable in both countries.

Ethnic density was calculated in both the US and English data as the number of residents in a racial/ethnic group in the area divided by the total population of the area, in line with other studies (Bécares et al., 2009; Pickett et al., 2009; Stafford et al., 2009). Two measures of ethnic density were used for each country: a measure of Caribbean ethnic density, and a measure of black ethnic density. The US measure of Caribbean ethnic density was defined as the percentage of the population in a respondent's census tract that was born in the Caribbean, whereas the English measure of Caribbean ethnic density was defined as the percentage of the population in a respondent's MSOA who self-identified as black Caribbean, regardless of nativity. Black American ethnic density was defined as percentage black in a census tract. Black English ethnic density was measured by combining the total sum of black Caribbean, black African, black other, mixed white and black African, and mixed white and black Caribbean residents in a MSOA. While the measures of Caribbean ethnic density are not equivalent across countries, the measures of disaggregated ethnic density allow for a greater understanding of ethnic density effects as they provide an opportunity to investigate differences in ethnic density effects within countries. Ethnic density was analysed as a continuous variable and was modelled as a 10% increase to ease with interpretation of results.

Statistical analysis

Given different age ranges covered in NSAL and EMPIRIC, analyses were restricted to respondents aged 18 to 74 to aid in the comparability of results. Both datasets analysed in

this study have a hierarchical structure (individuals, at level 1, are nested within areas, at level 2), so multilevel modelling techniques were employed to correct for non-independence of observations due to geographic clustering. To explore the overall association between ethnic density and health, odds ratios of reporting suicidal thoughts, a diagnosis of hypertension and poor self-rated health by ethnic density were estimated using multilevel logistic regression. Models were built sequentially to produce estimates of the association between the three health outcomes and either Caribbean or black ethnic density (Model 1), and mutually adjusted Caribbean and black ethnic density (Model 2). The second model allowed us to examine which of the ethnic density measures was most strongly related to suicidal ideation, hypertension and poor self-rated health. The association between ethnic density and decreased experiences of racism was examined with a second set of multilevel logistic regression models, which were conducted separately for each of the three measures of experienced racism. We tested for non-linearity in the association between Caribbean and black ethnic density and health and racism measures in the EMPIRIC and NSAL datasets by examining the statistical significance of a likelihood ratio test of the difference between a model that included a linear ethnic density term and a model with a linear ethnic density term and a squared ethnic density term. Results did not show any evidence of non-linear effects.

Analyses were adjusted for age, sex, generation, marital status, individual socioeconomic position and area deprivation. All data were weighted to account for non-response of eligible participants and the unequal probability of being sampled. Descriptive statistics were obtained using the *svy* commands Stata v.11 (Stata Corp, 2009). Multilevel logistic regressions were implemented using the user-written *runmlwin* command in Stata (Leckie & Charlton, 2011), to fit multilevel models in the MLwiN software package v.2.23 (Rashbash et al., 2009).

Results

The prevalence of suicidal ideation and hypertension was found to be similar for Caribbean people in the US and in England, although higher rates of poor self-rated health were reported by Caribbean English people (Table 1). Caribbean English people tended to be older and have lower educational qualifications than their American counterparts, who were more likely to be in employment or fulltime education. Half of the Caribbean English population had been born in the UK, whereas only 37% of their American counterparts were born in the US. A similar prevalence of experience of verbal and physical racial harassment were reported by black Caribbean people in the US and in England (14% among Caribbean American and 16% among Caribbean English people), but Caribbean English people reported higher rates of employment discrimination (see Table 1). Black and Caribbean English ethnic density were relatively low (up to 58% and 24%, respectively) when compared to black and Caribbean density in the US (up to 99% and 53%, respectively).

Table 2 presents the association between increased ethnic density and reports of suicidal ideation, doctor-diagnosed hypertension and poor self-rated health. Results for Caribbean American people showed a protective effect of Caribbean ethnic density on all three health measures, although results were only statistically significant for reports of poor self-rated

health. This association strengthened in Model 2, once black ethnic density was adjusted for, whereby as Caribbean ethnic density increased by 10%, reports of poor self-rated health decreased by 8% (Model 2, OR: 0.82; 95% CI: 0.72–0.94). When black ethnic density was examined, a non-statistically significant protective association between increased ethnic density and reports of suicidal ideation and doctor-diagnosed hypertension was found. This association was detrimental for self-rated health and upon adjustment of Caribbean ethnic density, in Model 2, this detrimental effect strengthened to become statistically significant (Model 2, OR: 1.08; 95% CI: 1.01–1.16). Similarly, adjustment for Caribbean ethnic density reduced the suggestion of a positive effect of black ethnic density on suicidal ideation and hypertension in the Caribbean American models (Table 2). For Caribbean English people these associations were reversed, so that a non-significant detrimental association was found between Caribbean ethnic density and the three health measures, and the opposite was found for black ethnic density. Both in the case of Caribbean and black ethnic density, adjusting for each other in Model 2 strengthened the effect sizes observed in Model 1 (detrimental for Caribbean ethnic density, protective for black ethnic density, see Table 2). However, none of these effects were statistically significant.

A clear trend of decreased reports of experienced racism and discrimination was found for Caribbean American people as both black and Caribbean ethnic density increased, although results were only statistically significant in the case of employment discrimination (Table 3). Among Caribbean English people, a protective association was observed between increased black ethnic density and reports of having been refused a job when Caribbean ethnic density was adjusted for (Model 2, OR: 0.52; 95% CI: 0.30–0.90). Examinations of Caribbean ethnic density showed a consistent association between increased ethnic density and experienced racism and discrimination, although results were only statistically significant for reports of job discrimination after adjusting for black ethnic density (Table 3, Model 2).

Examinations of the association between racism and health, presented in Table 4, showed a strong detrimental association between experienced racism and poor health in both the US and England. This association was stronger for suicidal ideation and reports of poor self-rated health among respondents who reported experiencing racist insults or harassment in the past year, and was particularly strong among Caribbean English people, who were more than twice as likely to report suicidal ideation and almost three times as likely to report poor self-rated health if they reported experiencing racist insults or job discrimination, as compared to their counterparts who had not experienced racism or discrimination.

Following from results presented in Tables 3 and 4 we examined whether ethnic density moderated the detrimental association between experienced racism and poor health, but we did not find supportive findings of a buffering effect of ethnic density. Although some results indicated a tendency for a weaker association between racism and health as ethnic density increased, none of the interaction terms between ethnic density and experienced racism and discrimination were statistically significant (results not shown).

Discussion

This study set out to explore and contrast ethnic density effects on health and experienced racism among Caribbean people living in two different national contexts. Results show that nominally similar measures of ethnic density perform differently across health outcomes and experienced racism measures in the US and in England. In the US, an increase in Caribbean ethnic density was associated with improved health and decreased experienced racism among Caribbean American people, but the opposite was observed for their English counterparts. On the other hand, increased black ethnic density was associated with improved health and reduced experienced racism for Caribbean English people (although associations were not statistically significant), but this was not the case for Caribbean people in the US. Although seemingly contrasting, these findings may reflect similarities in the ways in which the identities of Caribbean migrants to England (but not those to the US) and African American people in the US (but not black African people in England) are racialised.

The bulk of Caribbean migration to the US happened in the post-civil rights era (Portes & Grosfoguel, 1994) and currently, one of the characteristics of the Caribbean people in the US is their extraordinary success, not only in relation to other black groups, but in American society more generally (Cohen, 1992). Consistent with this, Caribbean American people are often stereotyped as hard workers (Waters, 1999). In contrast, stereotypes for Caribbean English people include being lazy, aggressive, rude, and using drugs (CRE, 1998). In fact, the broad experience of Caribbean migrants to England has been markedly less positive, experiencing unacknowledged wartime loyalty and treated as an unwelcome problem rather than as valued citizens of the Empire and the Commonwealth (Cohen, 1992), a situation reflected in their disadvantaged socioeconomic position. Two distinct and contextually specific constructions of Caribbean racialised identities appear to have been determined by the differing environments of migrant reception in the US and in England.

Detrimental associations between Caribbean ethnic density and health and social outcomes have been previously documented in the UK, where increased perceived black Caribbean ethnic density has been associated with lower social cohesion and greater fear of racial attacks (Stafford et al., 2010). These results, which relate strongly to our findings, are suggested to be an expression of internalised neighbourhood racial stigma (Sampson & Raudenbush, 2004), produced by internalised racism and negative stereotypes. Negative stereotypes internalised by black people include those perpetuated and exacerbated by the mass media, which portrays black people as criminals, dysfunctional parents, or as psychologically ill characters (CRE, 1998). The institutionalisation and normalisation of oppression in everyday life have been suggested to involve the internalisation of the dominant group’s values, norms and ideas (Speight, 2007), leading to self-stereotyping and internalised racism, which in the case of black Caribbean people in the UK, and African Americans in the US, contributes to detrimental ethnic density effects. It is worth noting that the ways in which Caribbean identities have been racialised in the UK bear some similarities with the racialised identities of African American people. Of course we need to consider the importance of differences in social and historical context, and drawing simple parallels between African American and English Caribbean experiences is not sufficient given differences in histories and contemporary situations, not least the extent of residential

segregation and access to public services such as education and healthcare. But we nevertheless can see connections. In this case, the implication of our findings is that the racialisation of African American and English Caribbean people can be observed in the wider structural racialisation of place, a "process of constructing particular geographic landscapes that help define and reinforce racialised social hierarchies" (Inwood & Yarbrough, 2010; p. 299). Following on from this discussion of racialised identities, one could expect future generations of black African English people to adopt the health trajectories of their more established Caribbean counterparts, as indeed later generations of Caribbean American migrants have already been reported to do, as they experience increased exposure to a racialised minority status in the US (Williams et al., 2007). This is reflected in the similarities in the levels of experienced racism and discrimination experienced by English and American Caribbean people (Table 1), and African American people (Nazroo et al., 2007).

We observed a clear protective effect of both ethnic density measures on experienced racism for Caribbean American people, and for black ethnic density and Caribbean English people, and a consistent association between experienced racism and discrimination and poor health across countries, but we did not find evidence of a buffering effect of ethnic density on health. Theoretical frameworks behind the ethnic density effect articulate that positive health outcomes are attributed to the protective and buffering effects that enhanced social cohesion, mutual social support and a stronger sense of community and belongingness provide from the direct or indirect consequences of discrimination and racial harassment, as well as from the detrimental effects of low status stigma on health (Bécares et al., 2009; Halpern & Nazroo, 2000; Pickett & Wilkinson, 2008). Studies in the UK provide support for a buffering effect of ethnic density on the association between experienced racism and health (Bécares et al., 2009), and supporting evidence for increased social cohesion in areas of higher ethnic density (Bécares, Stafford, Laurence, & Nazroo, 2011). This study contributes to the current understanding of the processes involved in the ethnic density effect, as it allows us to engage more critically with the notion of racialisation and the specific ways in which certain groups, and the areas where they live, are racialised and are consequently experienced by their residents and others, a conclusion that can be drawn more strongly with the evidence on the contrasting effects in the US and England of the nominally similar black and Caribbean density measures. While we find non-significant associations in a consistently detrimental direction between Caribbean density and health and racism in England, a clear protective association can be observed in the US. Parallel to this, we find a detrimental association between black ethnic density and health in the US, but not in England, where suggestions of a protective black ethnic density effect were found (associations were not statistically significant). The focus on density effects of this study allows us to highlight the significance of context, but it is worth noting that the ethnic density measures used here only crudely capture context, and do not adequately capture the differing ways in which nominally similar places may embody racial hierarchies. So while we draw general conclusions about the differences between Caribbean ethnic density in the US and in England, a more detailed investigation would no doubt reveal differences between areas within national contexts, and help us gain a greater purchase on the dynamics of the underlying mechanisms behind ethnic density effects.

Cross-national comparisons for this study were strengthened by the comparability of measures present in the NSAL and EMPIRIC datasets. However, one important difference should be considered. For the US context, Caribbean density was defined as immigrant density, which has been associated with protective effects on health (Mason, Kaufman, Emch, Hogan, & Savitz, 2010; Osypuk, Bates, & Acevedo-Garcia, 2010). In the UK context, Caribbean density was defined as the proportion of black Caribbean people in an MSOA, regardless of nativity. While at the absolute level this would represent a significant caveat, analyses for this paper were conducted at a relative level (*within* country examinations), comparing a generic measure of ethnic density, to a more specific and disaggregated ethnic density variable. Thus, while the measures of Caribbean ethnic density are not equivalent across countries, the measures of disaggregated ethnic density allow for a greater understanding of ethnic density effects as they provide, especially in the case of Caribbean English, important differences in ethnic density effects within countries. In addition, it is worth noting that we are modelling the impact of a relative increase in ethnic density, and we would expect the proportion of residents born in the Caribbean to correlate strongly with proportion identifying as Caribbean, especially in the US where migration is more recent.

It has been suggested that as compared to studies conducted in the UK, ethnic density studies conducted in the US have been more successful in detecting ethnic density effects due to the increased range of ethnic density of some of its populations (Pickett & Wilkinson, 2008), and results of this study provide additional support for this observation. Associations between Caribbean and black ethnic density in England and health and experienced racism outcomes were seldom statistically significant, which might be due to limited statistical power both in the study sample and in the range of ethnic density. A recent review of the literature on ethnic density effects reported that associations between ethnic density and health are most likely to be not statistically significant when sample sizes are smaller, but in studies with larger samples, findings support protective ethnic density effects (Shaw et al., in press). In the present study, the English sample was less than half of the American sample, and the range of ethnic density much more limited.

Due to the cross-sectional nature of the datasets analysed, it is not possible to discern from the results of this study whether living in a low ethnic density area precedes poor mental health, hypertension, self-rated health and experienced racism, or vice versa. However, in their work on ethnic density and mental health, Halpern and Nazroo (2000) tested whether ethnic density effects were due to social causation, social selection or drift, and acculturation, and argued that ethnic density effects found were the result of the benefits of group density, which notably reduces the exposure to racial harassment and provides increased social support from other ethnic minority people.

Despite its limitations, this study simultaneously compares for the first time two different types of measured own-group ethnic density variables for a particular racial/ethnic group (black and Caribbean ethnic density for Caribbean English and Caribbean American). This methodological aspect complements another UK study which compared a census-based measure of ethnic density to a perceived measure based on self-reported proportion of co-ethnics in the area (Stafford et al., 2009), and found the latter to better reflect individual

experiences of frequency and intensity of contact with people of one's own racial/ethnic group. Results of these two studies provide important information to improve our understanding of ethnic density effects, as comparisons across measures help to disentangle the pathways by which ethnic density operates. By comparing mutually adjusted Caribbean and black ethnic density effects in the US and England, the present study allowed us to examine the social construction of race and ethnicity as it depends on the racialised and stigmatised meaning attributed to it, and the clear association that these different racialised identities, as observed in the wider structural racialisation of place, have on health.

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References

Banks J, Marmot M, Oldield Z, Smith J. Disease and disadvantage in the United States and England. Journal of the American Medical Association. 2006; 295:2037–2045. [PubMed: 16670412]

Bécares L, Nazroo J, Stafford M. The buffering effects of ethnic density on experienced racism and health. Health & Place. 2009; 15:670–678. [PubMed: 19117792]

Bécares L, Stafford M, Laurence J, Nazroo J. Composition, concentration, and deprivation. Exploring their association with social cohesion among different ethnic groups in the UK. Urban Studies. 2011; 48:2771–2787. [PubMed: 22165157]

Cohen R. A diaspora of a diaspora? The case of the Caribbean. Social Science Information. 1992; 31(1):193–203.

Commission for Racial Equality. Stereotyping and racism: Findings from two attitude surveys. London: CRE; 1998.

Cozier Y, Palmer J, Horton N, Fredman L, Wise L, Rosenberg L. Relation between neighborhood median housing value and hypertension risk among black women in the United States. American Journal of Public Health. 2007; 97:718–724. [PubMed: 17329664]

Erens, B.; Primatesta, P.; Prior, G. Health survey for England 1999: The health of minority ethnic groups. London: The Stationary Office; 2001.

Feskanich D, Hastrup J, Marshall J, Colditz G, Stampfer M, Willett W, Kawachi I. Stress and suicide in the nurses' health study. Journal of Epidemiology and Community Health. 2002; 56:95–98. [PubMed: 11812806]

Goulbourne H, Solomos J. The Caribbean diaspora: some introductory remarks. Ethnic and Racial Studies. 2004; 27:533–543.

Halpern D, Nazroo JY. The ethnic density effect: results from a national community survey of England and Wales. International Journal of Social Psychiatry. 2000; 46:34–46. [PubMed: 14529077]

Heeringa, SG.; Torres, M.; Sweetman, J.; Baser, R. Technical Report. Michigan: Survey Research Center of the Institute for Social Research at the University of Michigan; 2006. Sample design, weighting and variance estimation for the 2001–2003 National Survey of American Life (NSAL) adult sample.

Iceland J, Mateos P, Sharp G. Ethnic residential segregation by nativity in Great Britain and the United States. The Journal of the Urban Affairs Association. 2011; 33(4):409–429.

ICPSR SURVEYS (NSAL). 2001–2003 [UNITED STATES] [Computer file]. ICPSR00190-v1. Ann Arbor, MI: Institute for Social Research, Survey Research Center [producer]/Inter-university Consortium for Political and Social Research [distributor]; 2007.

Idler E, Benyamini Y. Self-rated health and mortality: a review of twenty-seven community studies. Journal of Health and Social Behavior. 1997; 38:21–37. [PubMed: 9097506]

Inwood J, Yarbrough R. Racialized places, racialized bodies: the impact of racialization on individual and place identities. GeoJournal. 2010; 75:299–301.

Jackson JS, Torres M, Caldwell CH, Neighbors HW, Nesse RM, Taylor RJ, et al. The National Survey of American Life: a study of racial, ethnic and cultural influences on mental disorders and mental health. International Journal of Methods in Psychiatric Research. 2004; 13(4):196–207. [PubMed: 15719528]

Karlsen S, Nazroo JY, Stephenson R. Ethnicity, environment and health: putting ethnic inequalities in health in their place. Social Science & Medicine. 2002; 55:1647–1661. [PubMed: 12297249]

Leckie, G.; Charlton, C. runmlwin: Stata module for fitting multilevel models in the MLwiN software package. Centre for Multilevel Modelling, University of Bristol; 2011.

Mason S, Kaufman J, Emch M, Hogan V, Savitz D. Ethnic density and preterm birth in African-, Caribbean-, and US-born non-Hispanic black populations in New York City. American Journal of Epidemiology. 2010; 172:800–808. [PubMed: 20801865]

Mason S, Messer L, Laraia B, Mendola P. Segregation and preterm birth: the effects of neighborhood racial composition in North Carolina. Health & Place. 2009; 15(1):1–9. [PubMed: 18359264]

Massey, D.; Denton, N. American apartheid: Segregation and the making of the underclass. Cambridge: Harvard University Press; 1993.

Mellor J, Milyo J. Individual health status and racial minority concentration in US states and counties. American Journal of Public Health. 2004; 94:1043–1048. [PubMed: 15249313]

National Centre for Social Research & University College London. Department of epidemiology and public health, ethnic minority psychiatric illness rates in the community, 2000 [computer file]. Colchester, Essex: UK Data Archive [distributor]; Jun. 2003 p. SN 4685http://dx.doi.org/10.5255/UKDA-SN-4685-1

Nazroo J, Jackson J, Karlsen S, Torres M. The Black diaspora and health inequalities in the US and England: does where you go and how you get there make a difference? Sociology of Health & Illness. 2007; 29(6):811–830. [PubMed: 17986017]

Neeleman J, Wessely S. Ethnic minority suicide: a small area geographical study in south London. Psychological Medicine. 1999; 29(2):429–436. [PubMed: 10218934]

Neeleman J, Wilson-Jones C, Wessely S. Ethnic density and deliberate self harm; a small area study in south east London. Journal of Epidemiology and Community Health. 2001; 55(2):85–90. [PubMed: 11154246]

Noble, M.; Wright, G.; Dibben, C.; Smith, G.; McLennan, D.; Anttila, C., et al. The English indices of deprivation, 2004. London: Office of the Deputy Prime Minister, Neighbourhood Renewal Unit; 2004.

Office for National Statistics [ONS]. Beginner's guide to UK geography. 2007. Retrieved April 2011 from. http://www.statistics.gov.uk/geography/census_geog.asp#oa

OPCS. 1991 census definitions Great Britain. London: HMSO; 1992.

Osypuk T, Bates L, Acevedo-Garcia D. Another Mexican birthweight paradox? The role of residential enclaves and neighborhood poverty in the birthweight of Mexican origin infants. Social Science & Medicine. 2010; 70(4):550–560. [PubMed: 19926186]

Peach C. London and New York: contrasts in British and American models of segregation. International Journal of Population. 1999; 5:319–331.

Pickett KE, Pearl M. Multilevel analyses of neighbourhood socioeconomic context and health outcomes: a critical review. Journal of Epidemiology and Community Health. 2001; 55:111–122. [PubMed: 11154250]

Pickett K, Shaw R, Atkin K, Kiernan K, Wilkinson R. Ethnic density effects on maternal and infant health in the Millennium Cohort Study. Social Science & Medicine. 2009; 69:1476–1483. [PubMed: 19765872]

Pickett K, Wilkinson R. People like us: ethnic group density effects on health. Ethnicity and Health. 2008; 13:321–334. [PubMed: 18701992]

Portes A, Grosfoguel R. Caribbean diasporas: migration and ethnic communities. Annals of the American Academy of Political and Social Science. 1994; 533:48–69.

Rasbash, J.; Charlton, C.; Browne, WJ.; Healy, M.; Cameron, B. MLwiN version 2.23. Centre for Multilevel Modelling, University of Bristol; 2009.

Riva M, Gauvin L, Barnett TA. Toward the next generation of research into small area effects on health: a synthesis of multilevel investigations published since July 1998. Journal of Epidemiology and Community Health. 2007; 61(10):853–861. [PubMed: 17873220]

Robert S, Ruel E. Racial segregation and health disparities between black and white older adults. Journal of Gerontology. 2006; 61B:S203–S211.

Sampson R, Raudenbush S. Neighborhood stigma and the perception of disorder. Focus. 2004; 24:7–11.

Shaw R, Atkin K, Bécares L, Albor C, Stafford M, Kiernan K, et al. A review of the impact of ethnic density on adult mental disorders. British Journal of Psychiatry. , in press.

Shaw R, Pickett K, Wilkinson R. Ethnic density effects on birth outcomes and maternal smoking during pregnancy in the US Linked Birth and Infant Death data set. American Journal of Public Health. 2010; 100:707–713. [PubMed: 20167891]

Smaje C. Ethnic residential concentration and health: evidence for a positive effect? Policy and Politics. 1995; 23:251–269.

Speight S. Internalized racism: one more piece of the puzzle. The Counseling Psychologist. 2007; 35:126–134.

Sproston, K.; Nazroo, J. Ethnic Minority Psychiatric Illness Rates in the Community (EMPIRIC): Quantitative report. London: The Stationery Office; 2002. Available at http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4024034.pdf

Stafford M, Bécares L, Nazroo J. Objective and perceived ethnic density and health: findings from a UK general population survey. American Journal of Epidemiology. 2009; 170(4):484–493. [PubMed: 19608764]

Stafford, M.; Bécares, L.; Nazroo, J. Racial discrimination and health: exploring the possible protective effects of ethnic density. In: InStillwell, J., editor. Understanding population trends and processes. Vol. 3. Dordrecht, The Netherlands: Springer; 2010.

StataCorp. Stata statistical software: Release 11. College Station, TX: StataCorp L.P; 2009.

US Census Bureau. Geographical areas reference manual. 2005. Available at http://www.census.gov/geo/www/garm.html

Usher C. Trust and well-being in the African American neighborhood. City & Community. 2007; 6:367–387.

Vihjalmsson R, Krisjansdottir G, Sveinbjarnardottir E. Factors associated with suicide ideation in adults. Social Psychiatry & Psychiatric Epidemiology. 1992; 33:97–103.

Wannamethee G, Shaper A. Self-assessment of health status and mortality in middle-aged British men. International Journal of Epidemiology. 1991; 20:239–245. [PubMed: 2066228]

Waters, M. West Indians and African Americans at work: structural differences and cultural stereotypes. In: Bean, F.; Rose, SB., editors. Sociodemographic aspects of immigration for African Americans. New York: Russell Sage Foundation; 1999. p. 194-277.

Waters, M. Sanders, T.; Putnam, R.; Fiedlhouse, E., editors. Comparing immigrant integration in Britain and in the US. The age of Obama: The changing place of minorities in British and American society. 2010. Available at http://www.ageofobamabook.com/papers/waters.pdf

White K, Borrell L. Racial/ethnic concentration and self-reported health in New York City. Ethnicity and Disease. 2006; 16:900–908. [PubMed: 17061744]

Williams D, Haile R, Gonzalez H, Neighbors H, Baser R, Jackson J. The mental health of Black Caribbean immigrants: results from the National Survey of American Life. American Journal of Public Health. 2007; 97:52–59. [PubMed: 17138909]

Williams D, Mohammed S, Leavell J, Collins C. Race, socioeconomic status, and health: complexities, ongoing challenges, and research opportunities. Annals of the New York Academy of Sciences. 2010; 1186:69–101. [PubMed: 20201869]

Williams D, Neighbors H. Racism, discrimination and hypertension: evidence and needed research. Ethnicity and Disease. 2001; 11(4):800–816. [PubMed: 11763305]

Table 1

Descriptive characteristics of the NSAL and EMPIRIC datasets.

	Caribbean American (NSAL) (*n* = 1568) %	Caribbean English (EMPIRIC) (*n* = 661) %
Suicidal ideation	11	10
Hypertension	27	29
Poor self-rated health	17	33
Sex		
Female	49	59
Age, M(SE)	39 (0.81)	42 (0.66)
Household income		
Bottom quintile	21	21
Second quintile	19	19
Middle quintile	18	20
Fourth quintile	20	19
Highest quintile	22	21
Educational qualifications		
<High school degree or O-level	21	28
High school degree or A-level	30	45
Higher qualifications	49	27
Employment status		
Employed or in FT education	76	65
Unemployed	13	9
Unemployed due to LT sickness	4	7
Looking after home	2	9
Retired	5	10
Nativity		
Born in US/UK	37	51
Marital status		
Married/cohabiting	50	43
Divorced/separated/widowed	18	16
Single never married	32	41
Racism and discrimination		
Insulted or harassed in the last 12 months	16	14
Refused a job	17	29
Treated unfairly at work or denied promotion	10	24
Area deprivation		
1. Least deprived	25	1
2.	23	5
3.	18	14
4.	20	29
5. Most deprived	14	50

	Caribbean American (NSAL) (***n*** **= 1568) %**	**Caribbean English (EMPIRIC)** (***n*** **= 661) %**
Black ethnic density, M(SD) [range]	52 (88.41) [0–99]	15 (11.95) [0–58]
Caribbean ethnic density, M(SD) [range]	13 (43.45) [0–53]	8 (5.85) [0–24]

Table 2

Association between ethnic density (10% increase) and suicidal ideation, hypertension and poor self-rated health among Caribbean American and Caribbean English people.

	Caribbean American		Caribbean English	
	Model 1	Model 2	Model 1	Model 2
	O.R. (95% C.I.)	O.R. (95% C.I.)	O.R. (95% C.I.)	O.R. (95% C.I.)
Black ethnic density[a]				
Suicidal ideation	0.96 (0.91–1.07)	1.01 (0.92–1.12)	0.98 (0.79–1.22)	0.83 (0.56–1.21)
Hypertension	0.95 (0.89–1.01)	0.95 (0.89–1.02)	0.93 (0.77–1.11)	0.67 (0.43–1.05)
Poor self-rated health	1.03 (0.97–1.10)	1.08 (1.01–1.16)*	1.02 (0.85–1.23)	0.89 (0.60–1.34)
Caribbean ethnic density[b]				
Suicidal ideation	0.85 (0.71–1.02)	0.86 (0.71–1.06)	1.07 (0.67–1.69)	1.51 (0.66–3.47)
Hypertension	0.93 (0.82–1.05)	0.97 (0.85–1.11)	1.02 (0.69–1.51)	2.11 (0.94–4.71)
Poor self-rated health	0.87 (0.76–0.98)*	0.82 (0.72–0.94)**	1.12 (0.79–1.58)	1.36 (0.62–2.96)

*$p < 0.05$,

**$p < 0.01$,

†$p < 0.001$.

Model 1 adjusts for sex, age, marital status, generation, household income, education, employment status, and area deprivation.

[a]Model 2 additionally adjusts for Caribbean ethnic density.

[b]Model 2 additionally adjusts for black ethnic density.

Table 3

Association between ethnic density (10% increase) and racism and discrimination among Caribbean American and Caribbean English people.

	Caribbean American		Caribbean English	
	Model 1	Model 2	Model 1	Model 2
	O.R. (95% C.I.)	O.R. (95% C.I.)	O.R. (95% C.I.)	O.R. (95% C.I.)
Black ethnic density[a]				
Insulted in the last 12 months	0.97 (0.90–1.04)	0.99 (0.92–1.07)	0.87 (0.70–1.09)	0.63 (0.39–1.03)
Refused a job	0.94 (0.88–0.99)*	0.96 (0.89–1.02)	0.98 (0.79–1.21)	0.52 (0.30–0.90)*
Treated unfairly at work or denied promotion	0.98 (0.91–1.07)	1.03 (0.94–1.12)	1.04 (0.87–1.24)	1.03 (0.68–1.57)
Caribbean ethnic density[b]				
Insulted in the last 12 months	0.88 (0.77–1.01)	0.89 (0.77–1.03)	0.90 (0.57–1.44)	1.98 (0.74–5.28)
Refused a job	0.89 (0.79–1.01)	0.90 (0.78–1.04)	1.25 (0.81–1.93)	4.27 (1.40–12.99)**
Treated unfairly at work or denied promotion	0.85 (0.73–0.99)*	0.83 (0.70–0.97)*	1.09 (0.75–1.60)	1.10 (0.47–2.55)

*$p < 0.05$,

**$p < 0.01$,

†$p < 0.001$.

Model 1 adjusts for sex, age, marital status, generation, household income, education, employment status, and area deprivation.

[a]Model 2 additionally adjusts for Caribbean ethnic density.

[b]Model 2 additionally adjusts for black ethnic density.

Table 4

Association between racism and discrimination, and suicidal ideation, hypertension and poor self-rated health among Caribbean American and Caribbean English people.

	Suicidal ideation	Hypertension	Poor self-rated health
	O.R. (95% CI)	**O.R. (95% CI)**	**O.R. (95% CI)**
Caribbean American			
Insulted in the last 12 months	1.85 (1.17–2.93)**	1.66 (1.10–2.51)**	1.77 (1.15–2.72)**
Refused a job	1.60 (0.94–2.71)	1.20 (0.78–1.85)	1.24 (0.84–1.84)
Treated unfairly at work or denied promotion	1.92 (1.03–3.58)*	0.89 (0.57–1.40)	0.86 (0.49–1.52)
Caribbean English			
Insulted in the last 12 months	2.07 (1.08–3.97)*	0.95 (0.50–1.83)	2.82 (1.56–5.06)†
Refused a job	2.36 (1.29–4.31)**	1.52 (0.93–2.48)	1.40 (0.83–2.25)
Treated unfairly at work or denied promotion	1.53 (0.80–2.95)	1.85 (1.14–2.99)**	1.62 (0.92–2.8)

* $p < 0.05$,

** $p < 0.01$,

† $p < 0.001$; adjusted for sex, age, marital status, generation, household income, education, employment status, and area deprivation.