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Online supplement

Search terms

Health terms

addict*
alcohol*
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''birth outcomes''
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screening*
''self harm*''
smoking
smoker*
''substance use''
suicide
suicidal
schizophrenia
ulcer*
''well being''

Ethnic density terms

ethnic composition
ethnic enclave*
ethnic density
ethnic segregation
ethnic concentration
group concentration
group density
minority concentration
minority density
racial composition
racial concentration
racial homogeneity
racial density
racial segregation
residential concentration
residential segregation

Neighbourhood terms

neighborhood*
neighbourhood*

Race/ethnicity terms

African American
Afro Caribbean*
Asian*
Black*
Ethnic*
Hispanic*
Mexican*
minority group*

Table DS1 Ecological studies of hospital admission rates

Reference	Data-set	Sample	Outcomes	Area unit	Ethnic density measure (distribution)	Results
Cochrane & Bal (1988)[18]	Ecological study using data from the Mental Health Inquiry from DHSS (1981) UK	Analyses conducted separately by gender and the following ethnicities: Irish, Indian, Pakistani and Caribbean	Rates of admission to mental hospitals	Regional health authorities (*n* not reported)	% same ethnic group size (highest density not reported)	Irish males were at reduced risk of being admitted to hospital at higher densities. For all the other ethnicity and gender combinations there was no association
Klee *et al* (1967)[19]	Maryland Psychiatric Case Register (1961–1964) USA	All Black and minority ethnic Maryland residents	Psychiatric admission rates	Census tract ($n = 158$)	% Black and minority ethnic (10% or less, 11–50%, 51–89%, 90% or more)	Admission rates for Black and minority ethnic people were lower in census tracts, with higher percentages of Black and minority ethnic
Krupinski (1975)[20]	Ecological study of admissions to all mental health department facilities in Melbourne (1962–1970) Australia	Italian and Greek men and women (data were divided into 3 periods: 1962–1964, 1965–1967 and 1968–1970)	Use of mental department facilities for psychiatric disorders	Municipality	% same ethnicity ($<5\%$, $\geqslant 5\%$)	There was no evidence of an association between ethnic density for Italian men and women or Greek men for any of the period. Greek women in 1965–1970 only were at increased risk of psychiatric disorders if they lived outside areas $\geqslant 5\%$ same ethnicity
Levy & Rowitz (1973)[21]	Admissions to 44 public and private mental institutions and psychiatric units of general hospitals (July 1960 to June 1961) USA	Black people admitted to public and private mental institutions. Age 15+	Admissions to mental hospital	Community areas ($n = 10\,484$)	% Black ($<10\%$, 10–15%, 26–50%, 51–75%, 76–100%)	Mental hospital utilisation rates for Black people were lower in community areas, with a high percentage of Black people
Mintz & Schwartz (1964)[22]	Ecological study with data from the Massachusetts Department of Mental Health (1956–1958) USA	First- or second-generation Italians in corporate Boston and suburban area	Schizophrenia, bipolar disorder	Communities ($n = 27$)	% Italian born (27.9% highest density)	% Italian was negatively associated with schizophrenia and bipolar disorder rates for Italian in analyses controlling for median monthly rental
Muhlin (1979)[23]	Ecological study using hospital admissions records from the Office of Statistical and Clinical Information Systems of the New York State Department of Mental Hygiene in Albany (1969–1970) USA	The sample population included German, Polish, Austro-Hungarian, USSR and Italian nationals	Ethnicity specific in-patient admissions to state licensed mental hospitals	Health area (Irish $n = 124$, German $n = 108$, Polish $n = 135$, Austro-Hungarian $n = 108$, USSR $n = 108$, Italian $n = 150$)	% 1st and 2nd generation from same ethnicity (highest density not reported)	For each of the ethnic groups % 1st and 2nd generation immigrant was associated with lower rates of psychiatric hospitalisation
Rabkin (1979)[24]	Admission records for New York State psychiatric facilities (1969–1971) USA	All psychiatric admissions for Black and Puerto Rican people	Total admission rates to psychiatric hospitals over a 3-year period	Health area ($n = 338$)	% Black in 3 categories ($<20\%$, 20–79%, $\geqslant 80\%$) % Puerto Rican in 3 categories ($<20\%$, 20–50%, $>50\%$)	Admission rates for Black people were highest at a density of less $<20\%$, and had similarly low rates for densities of both 20–79% and $\geqslant 80\%$. Admission rates for Puerto Rican people were highest a at density of less $<20\%$, lowest for densities of 20–50% and in-between for densities $>50\%$

DHSS, Department of Health and Social Security; USSR, Union of Soviet Socialist Republics.

Table DS2 Multilevel studies of anxiety and depression

Reference	Data-set	Sample	Outcome(s)	Area unit	Ethnic density measure (distribution)	Covariates (area covariates)	Method	Results
Abada *et al* (2007)[25]	Cycles 2, 3, 4 of the Canadian National Longitudinal Survey of Children & Youth linked to the Canadian 1996 Census. Response rate 86% (1996–2001) Canada	Adolescents aged 12–13 1996/1997 $n = 1111$, 9% visible minority	Depression (12-item CES-D)	Census tract (n not reported)	% 'visible minority' (mean 8.7%)	Health, gender, parental income, parental education, family structure, ethnicity, length of residence, perceived neighbourhood cohesion, city (median income)	Cross-level interaction study using multilevel data and analysis	% 'visible minority' was not associated with an adverse effect for White adolescents; however, for 'visible minority' adolescents %, 'visible minority' was associated with increased CES-D score
Aneshensel *et al* (2007)[a,26]	Study of Asset and Health Dynamics Among the Oldest Old (AHEAD). Response rate 80% (1993) USA	3442 people aged 70 years or more. Weighted proportions were: 10.2%, African American, 4.1% Hispanic	Depression (8-item CES-D)	Census tract ($n = 1217$)	% African American (mean 19.4, s.d. = 31.1) % Hispanic (mean 11.9, s.d. = 20.9)	Gender, ethnicity, marital status, education, age, household income and wealth, religion	Cross-level interaction study using multilevel data and analysis	After adjustment there was no association between % African American or % Hispanic and depression in the total sample nor was there evidence of an inter-action between same-ethnic density and African American ethnicity or Hispanic ethnicity
Das-Munshi *et al* (2010)[27]	Ethnic Minorities Psychiatric Illness Rates in the Community Survey (EMPIRIC). Response rate 68% (2000) UK	Adults aged 16–74, n for all minority groups: 3446	Common mental disorders (CIS-R)	MSOA ($n = 892$)	Continuous measure of % Bangladeshi, % Black Caribbean, % Indian, % Pakistani, % Irish, % White British	Age, gender, education, social class, racism, social support, marital status (IMD 2000)	Stratified within ethnic groups, multilevel methods used	For Bangladeshi, Irish and all groups combined, ethnic density was associated with reduced risk. The effect was not attenuated when adjusting for racism and social support. For Black Caribbean, Indian and Pakistani people there was a non-significant protective effect of ethnic density
Ecob & Williams (1991)[28]	Cross-sectional survey investigating sampling strategies for Asian people in Glasgow. Response rate 81% (1987) UK	Asians between 30–39 years, $n = 173$	Self-report of depression in past year and GHQ-12 score	Postcode sector ($n = 11$)	Proportion Asian born (Categories $<3\%$, $3<6\%$, $>6\%$)		Multilevel data without multilevel analysis	Those living at high density were significantly less like to have a high GHQ and marginally less likely to have experienced depression
Halpern & Nazroo (2000)[b,29]	Fourth National Survey on Ethnic Minorities. Response rate 61% for Black Caribbean and 74–83% for South Asian groups (1993–1994) UK	Caribbean $n = 624$, Indian $n = 643$, Pakistani $n = 589$, African–Asian $n = 355$, Bangladeshi $n = 292$, Chinese $n = 106$, combined ethnic minority $n = 2609$	Neurotic symptoms (CIS-R)	Census ward (n not reported)	Same ethnic group density and any minority density (densities 25%+ for South Asian, few Chinese or Caribbean at density $>25\%$ density)	Age, gender, economic hardship, language, age at migration	Multilevel data without multilevel analysis	In the combined ethnic minority sample higher density was associated with reduced neurotic symptoms. In ethnic minority subgroups, this was significant for Indian people, marginally significant for Caribbean people and in the same direction but non-significant for African–Asian, Bangladeshi and Chinese groups. For Pakistani residents the direction was reversed and non-significant

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Table DS2 Multilevel studies of anxiety and depression *(continued)*

Reference	Data-set	Sample	Outcome(s)	Area unit	Ethnic density measure (distribution)	Covariates (area covariates)	Method	Results
Henderson *et al* (2005)[30]	10-year data from the Coronary Artery Risk Development in Young Adults study (CARDIA). Initial response rate 51% of whom 79% participated at 10-year follow up (1995–1996) USA	692 Black men and 984 Black women between the ages of 28 and 40	Depressive symptoms (CES-D)	Census block ($n = 2451$ including 'non-Black' sample)	% Black divided into quartiles (range 11–86%) % White divided into quartiles (range 8–78%)	Age, education (SES)	Multilevel data with minimal clustering	There was no associations between % Black or % White and depression for men or women
Hybels *et al* (2006)[31]	The Duke site of the Epidemiologic Studies of the Elderly (EPESE). Response rate 80% (1989–1990) USA	Total collected sample was 2998 people over the age of 65 of whom 54% were Black	Depressive symptoms (CES-D)	Census tract ($n = 91$)	% Black households (mean 40.4%, 25th percentile 27.8%, 75th percentile 42%)	Age, gender, ethnicity marital status, education, household income, physical limitations	Cross-level interaction study using multilevel data and analysis	Non-significant negative association between % Black and depressive symptoms in total sample and interaction terms were not significant
Mair *et al* (2010)[32]	Multi-Ethnic Study of Atherosclerosis (2000–2002) USA	Adults aged 45–84 Total $n = 5667$	Depressive symptoms (CES-D)	Census tract	Continuous measure of % African American, % Hispanic, % Asian	Age, gender, education, income, nativity, marital status (area income, wealth, education, occupation)	Stratified within ethnic groups, multilevel methods used	High ethnic density associated with risk for Black men. Black ethnic density was not associated with risk in Black women. No associations found for Chinese men. Ethnic density protective for Hispanic women and men
Oliver (2003)[33]	Americans' changing lives survey. Response rate 68% (1986) USA	The total sample was 2135. Average age 53. Proportion Black not reported	Depressive symptoms (CES-D)	Census place ($n = 210$)	% White (not described)	Age, ethnicity, education, family income, gender, marital status, length of residences (median income, population density, building age, % commuting)	Cross-level interaction with multilevel data without multilevel analysis	There was no association between depression and % White in the whole population and the interaction term with individual ethnicity and the total population was not significant
Ostir *et al* (2003)[34]	The Hispanic Established Population for the Epidemiological Study of the Elderly (Hispanic EPESE). Response rate 83% (1993–1994) USA	2710 Mexican American residents aged 65+ in non-institutionalised settings	Depressive symptoms (CES-D)	Census tract ($n = 206$)	% Mexican American (0–41%, 42–59%, 60–82%, 83+%)	Age, gender, marital status, education, nativity, health, relative income (% poverty)	Multilevel data and analysis	There was a negative association between % Mexican American and CES-D score
Pickett *et al* (2009)[35]	Millennium Cohort Study. Response rate 72% (2001–2002) UK	Singleton infants and their mothers Black African $n = 367$, Black Caribbean $n = 252$, Bangladeshi $n = 369$, Indian $n = 462$, Pakistani $n = 868$	Self-reported postnatal depression, self-report of clinical diagnosis of ever depressed	MSOA (Bangladeshi $n = 71$, Black African $n = 80$, Black Caribbean $n = 82$, Indian $n = 129$, Pakistani 125) LSOA briefly discussed	Proportion same ethnicity (Bangladeshi 0–5%, 5–30%, 30+%; Black African 0–5%, 5–30%, 30–50%; Black Caribbean 0–5%, 5–30%; Indian and Pakistani 0–5%, 5–30%, 30–50%, 50+%)	Age, parity, education, marital status, social class, benefits, nativity, language (deprivation)	Multilevel data and analysis	For Indian and Pakistani mothers same-ethnic density was associated with reduced risk of ever being depressed. No association for other ethnic groups. No association for any ethnic group with ethnic density and postnatal depression. No difference for results at LSOA except. Bangladeshi mothers higher risk of ever depression at higher densities

(continued)

Table DS2 Multilevel studies of anxiety and depression *(continued)*

Reference	Data-set	Sample	Outcome(s)	Area unit	Ethnic density measure (distribution)	Covariates (area covariates)	Method	Results
Propper *et al* (2005)[36]	British Household Panel Survey (BHPS). Response rate 74% (1991–1995) UK	Total sample was 8184 for mental health and 7047 in change in mental health of whom 3.3% were Black and minority ethnic, including children	GHQ-12 and change in GHQ-12	Bespoke neighbourhoods of approximately 500 people created for each participant	Factors on which high loadings are the proportion Pakistani, Bangladeshi, Indian or Black residents (range not available)	Age, gender, ethnicity, education, number of adults, number of children, tenure, social class	Cross-level interaction study using multilevel data and analysis	There was no association with ethnic density for the majority population nor was there a significant interaction between individual ethnicity and ethnic density. However, there was an interaction between ethnic density and education. In contrast, for change in GHQ symptoms there was no association for White people; however, for Black and minority ethnic people there was a protective effect
Shields & Wailoo (2002)[b,37]	Fourth National Survey on Ethnic Minorities. Response rate 61% for Black Caribbean and 74–83% for South Asian groups (1993–1994) UK	Males aged between 22 to 64 years. 224 were Black Caribbean and 739 were South Asian males	6 items from the GHQ	Census ward (*n* not reported)	Same ethnic density (<5%, 5–32%, >32%)	Age, ethnicity, number of children, health, education, employment, household income, fear of racism, language, nativity, happy with area (urban)	Multilevel data without multilevel analysis	There was no association between ethnic density and GHQ for Black Caribbean group. The South Asian group had a marginally significant reduction in GHQ score at low densities
Tweed *et al* (1990)[38]	Wave I of the Eastern Baltimore Mental Health Survey (EBMHS). Response rate 78% (1981) USA	1112 Black adults	Depressed mood and major depressive episode	Census tract (*n* not reported)	% Black (high >90%, moderate 10 to 90%, low <10% were excluded as there were too few for analysis)		Multilevel data and analysis	Depressive symptoms were higher at moderate levels of ethic density
Wickrama *et al* (2005)[c,39]	National longitudinal Study of Adolescent Health (Wave 1). Response rate 80% (1995) USA	4182 Black adolescents aged 12–19 and a White sample of 11 703	Depressive symptoms (18 items CES-D)	Census tract ($n = 2000$)	% Black and minority ethnic (mean centred variables used)	Ethnicity, gender, marital status, family poverty, family size (poverty)	Cross-level interaction study using multilevel data and analysis	Living in communities with higher proportion of Black and minority ethnic people was associated with reduced depressive symptoms
Wight *et al* (2005)[c,40]	National Longitudinal Study of Adolescent Health. Response rate 80% (1994–1995) USA	Adolescents in school grades 7–13. African American group $n = 3927$, Hispanic group $n = 3151$, Asian Pacific Islander group $n = 1305$, total sample $n = 18\,473$	Depressive symptoms (16 items CES-D)	High school attendance area ($n = 80$)	% 'non-Hispanic White' (range 17–100), % African American, % Hispanic, % Asian Pacific islander (range not reported)	Ethnicity, gender, age, family structure, household income (median household income)	Cross-level interaction study using multilevel data and analysis	Asian Pacific Islander and Hispanic group were not significantly different from the White majority for whom % 'non-Hispanic White' was protective. For African Americans, % 'non-Hispanic White' had an adverse effect. % African American, % Hispanic and % Asian Pacific islander were not significant in any analyses

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Table DS2 Multilevel studies of anxiety and depression *(continued)*

Reference	Data-set	Sample	Outcome(s)	Area unit	Ethnic density measure (distribution)	Covariates (area covariates)	Method	Results
Wight *et al* (2009)[a,41]	Study of the Assets and Health Dynamics Among the Oldest Old (AHEAD). Response rate 80% (1993, 1995 and 1998) USA	Non-institutionalised people aged 70 or more $n = 3442$, of whom 72.5% were 'non-Hispanic White', 17.14% African American, and 6.30% Hispanic	Depressive symptoms (8 items from the CES-D)	Census tract ($n = 1217$)	Proportion African American (mean 19.4, s.d. = 31.1) Proportion Hispanic (mean 11.9, s.d. = 20.9)	Age, gender, ethnicity, marital status, education, income, wealth, religion, assistance with activities of daily living, heart problems, stroke, cognition, other major conditions (socioeconomic disadvantage, affluence, residential stability, proportion aged 65 and older)	Cross-level interaction with multilevel data and analysis	For African American group in adjusted analyses there is no association between proportion African American and change in depressive symptoms. For changes in symptoms between time 1 and time 2 there was a significant 3-way interaction between proportion Hispanic neighbourhood disadvantage and being Hispanic. Such that high Hispanic density was protective for Hispanic residents living in disadvantaged neighbourhoods. However, the interaction was not significant from time 2 to time 3
Ying & Akutsu (1997)[42]	Californian health and mental needs assessment. Response rate not reported	Vietnamese $n = 713$, Cambodians $n = 492$, Laotians $n = 551$, Hmong $n = 231$, Chinese Vietnamese $n = 245$	Depression (8 items from Rumbaut's Psychological Well-Being Scale)	County ($n = 9$)	% same ethnicity (for Chinese Vietnamese, % Chinese used). Mean percentage: Laotian 0.27%, Cambodian 0.37%, Vietnamese 1.54%, Hmong 2.31%, and Chinese Vietnamese 7.60%	Gender, number of traumatic events, age at arrival, years in USA, education, employment, language, sense of coherence	Multilevel data without multilevel analysis	For Vietnamese, ethnic density was negatively associated with depression when sense of coherence is accounted for (no association without). For Cambodians, ethnic density was not associated with depression when sense of coherence is accounted for (positive without). For Laotians, ethnic density was not associated with depression when sense of coherence is accounted for (negative without). For Hmnog, ethnic density was not associated with depression irrespective of sense of coherence. For Chinese Vietnamese, ethnic density was negatively associated with depression.
Yuan (2008)[43]	The 1995 Illinois Community Crime and Health Survey. Response rate 73% (1995) USA	2292 adults 18+ of whom 9.1% are Black and 4.1% are Hispanic	Depression (7-item CES-D)	Census tract (n not reported)	% Black (mean 18.0, s.d. = 20.8) % Hispanic (mean 16.1, s.d. = 8.6)	Age, gender, education, ethnicity, household income, employment, number of children, marital status, social support (disadvantage, urban, neighbourhood, social ties)	Cross-level interaction study with multilevel data and analysis	For Black residents living at high densities was associated, with reduced depressive symptoms. This was partly explained by a measure of social support. There was no association between Hispanic density and depression in the total population, nor was there an interaction term between individual Hispanic density and area level density

CES-D, Center for Epidemiologic Studies Depression Scale; MSOA, middle layer super output area; IMD, Index of Multiple Deprivation; CIS-R, Clinical Interview Schedule – Revised; GHQ-12, General Health Questionnaire – 12 item; SES, socioeconomic status; LSOA, lower layer super output area.
a. Both Aneshensel *et al* (2007) and Wight *et al* (2009) used the same study.
b. Both Halpern & Nazroo (2000) and Shields & Wailoo (2002) used the same study.
c. Both Wickrama *et al* (2005) and Wight *et al* (2005) used the same study.

Table DS3 Multilevel studies of psychoses

Reference	Data-set	Sample	Outcome(s)	Area unit	Ethnic density measure (distribution)	Covariates (area covariates)	Method	Results
Bécares *et al* (2009)[a,44]	Fourth National Survey on Ethnic Minorities. Response rate 61% for Black Caribbean and 74–83% for South Asian groups (1993–1994) UK	Caribbean $n = 1215$, Indian $n = 1278$, Pakistani $n = 1190$, Bangladeshi $n = 594$; combined ethnic minority $n = 5196$	Psychotic symptoms (PSQ)	Census ward (n not reported)	Continuous measures of same ethnic density and overall minority density (Indian, Pakistani and Bangladeshi density range 0 to at least 40%; Caribbean density 0 to at least 20%)	Age, gender, SEP, racism, racism × ethnic density (deprivation)	Multilevel data and analysis	Overall ethnic minority density, and same ethnic density for Indian and Bangladeshi people was associated with reduced psychotic symptoms. This became non-significant on adjustment for racism and SES. There was no association between same-ethnic density and psychotic symptoms for Caribbean people. Same-ethnic density was associated with increased psychotic symptoms for Pakistani people
Boydell *et al* (2001)[45]	Official records study of the London Borough of Camberwell. Response rate not applicable (1988–1997) UK	Residents of the London Borough of Camberwell 1988–1997 divided into White and Black and minority ethnic	Incident cases of psychotic illness assessed using research diagnostic criteria for schizophrenia	Census ward ($n = 15$)	Proportion Black and minority ethnic (8–22.8%, 23–28.1%, 28.2–57%)	Age, gender, ethnicity (deprivation)	Cross-level interaction study using multilevel data and analysis	No association with proportion Black and minority ethnic in the total population, but interaction with individual ethnicity such that higher density is associated with reduced risk of psychotic illness for the overall Black and miniroty ethnic sample
Halpern & Nazroo (2000)[a,29]	Fourth National Survey on Ethnic Minorities. Response rate not applicable (1993–1994) UK	Caribbean $n = 1215$, Indian $n = 1278$, African–Asian $n = 733$, Pakistani $n = 1190$, Bangladeshi $n = 594$, Chinese $n = 216$; combined ethnic minority $n = 5226$	Psychotic symptoms (PSQ)	Census ward (n not reported)	Same ethnic group density and any minority density (densities 25%+ for South Asian, few Chinese or Caribbean people at $>25\%$ density)	Age, gender, economic hardship, language, age at migration	Multilevel data without multilevel analysis	In the combined ethnic minority sample, ethnic density was associated with lower PSQ score. For ethnic groups separately the effects remained significant for those of Indian, Caribbean and Bangladeshi origin, in the same direction but not significant for those of African and Chinese origin and non-significant but in the opposite direction for those of Pakistani origin
Kirkbride *et al* (2007, 2008)[46,47]	AESOP. Response rate not applicable (1997–1999) UK	Residents of the London Borough of Camberwell 1988–1997 divided into White and Black and minority ethnic and White British, Black Caribbean, Black African, Asian, Chinese, Other	Incidence of schizophrenia (ICD-10, F20) Incidence of other non-affective disorders, affective disorders	Census ward ($n = 33$)	Proportion Black and minority ethnic (24.8–47.1%, 47.2–56.1%, 56.4–74.3%)	Age, gender, ethnicity (social capital, social cohesion, trust, deprivation, population density)	Cross-level interaction study using multilevel data and analysis	For schizophrenia when all ethnic minority groups were combined incidence rates were lower at higher density. However, for each ethnic group separately and whichever way ethnicity was classified there was no association between ethnic density and other affective disorders

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Table DS3 Multilevel studies of psychoses *(continued)*

Reference	Data-set	Sample	Outcome(s)	Area unit	Ethnic density measure (distribution)	Covariates (area covariates)	Method	Results
Schoefield *et al* (2010)[48]	GP records (1996–2006) UK	Those registered with practices in Lambeth, south London, for at least 6 months, aged 16–74	First diagnosis of a psychotic illness, excluding drug-induced	LSOA and ward	a) Categorised as 'high'/ 'low', depending on higher/lower than average % Black contrasted to sample as a whole. Average Black density = 25% (b) Categorised into quintiles based on relative ethnic density	Age, gender (IMD)	Cross-level interaction study using multilevel data and analysis, as well as stratified analysis using quintiles of density	No associations at ward-level. At LSOA, high density showed no difference in psychosis rates among Black compared with White people. Black people in low-density areas almost 3 higher risk relative to White. In stratified models, protective associations found. Black people in the least dense LSOAs >5 of the risk of psychosis compared with most dense LSOAs
Veling *et al* (2008)[49]	Official records study linked to data from a Hague municipality source not described. Response rate not applicable (1997–1999/ 2005–2005) The Netherlands	First- and second-generation non-Western immigrants. Aged 15–54 (ethnicity defined by immigration history). Numerator data for Moroccan *n* = 91, Surinamese *n* = 94, Turkish *n* = 55, native Dutch people *n* = 226	Incident first contact for possible psychotic disorder	Post code (*n* = 44)		Age, gender, marital status (SES)	Cross-level interaction study using multilevel data and analysis	Main effect of ethnic density is not clear. However, there was a significant interaction between ethnic density for all immigrants combined and for Moroccan immigrants separately, the interaction terms suggesting that for ethnic minorities the ethnic density is either less adverse or protective

SEP, socioeconomic position; SES, socioeconomic status; PSQ, Psychosis Screening Questionnaire; AESOP, Aetiology and Ethnicity of Schizophrenia and Other Psychoses; GP, general practitioner; LSOA, lower layer super output area; IMD, Index of Multiple Deprivation.
a. Both Bécares *et al* (2009) and Halpern & Nazroo (2000) used the same study.

Table DS4 Multilevel studies of suicide and self-harm

Reference	Data-set	Sample	Outcome(s)	Area unit	Ethnic density measure (distribution)	Covariates (area covariates)	Method	Results
Neeleman & Wessely (1999)[50]	Official records study for unnatural deaths in the London Boroughs of Lewisham, Lambeth, Southwark and Greenwich. Response rate not applicable (1991–1993) UK	Entire population of London Boroughs of Lewisham, Lambeth, Southwark and Greenwich. Numerator 329 suicides. Sample analysed as overall Black and minority ethnic and for Asian and Caribbean subgroupings	Suicide	Electoral ward ($n = 109$)	Black and minority ethnic density, African–Caribbean density (1–27%), Asian density (1–21%)	Age, gender (deprivation)	Multilevel data and analysis	In the combined sample Black and minority ethnic density was significantly associated with reduced risk of suicide. Similar results were found for African–Caribbean and Asian residents separately, although the results were not significant
Neeleman *et al* (2001)[51]	Official records study for KCH and LH. Response rate not applicable (1994–1997) UK	Patients (and the corresponding population) attending KCH and LH. Numerator 164. Sample analysed as overall Black and minority ethnic and for Asian and Caribbean subgroupings	Hospital admissions for self-harm (excluding overdose)	Electoral ward ($n = 73$)	Any minority density; African–Caribbean density (3.9–46.4%), Asian density (1.7–14.9%)	Age, gender (deprivation)	Multilevel data and analysis	African–Caribbean rates of attendance were significantly higher at high density for those in the KCH area. For those in the LH catchment area higher density had a non-significant protective effect. Rates of self-harm for the Asian residents were lower at high density for both LH and KCH. Using any minority density, ethnic minority participants were at increased risk of self-harm in the KCH area, and there was no association in the LH area

KCH, King's College Hospital; LH, Lewisham Hospital.