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Minority or migrant? loneliness among older immigrants in England

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ABSTRACT

Using recently available, nationally representative data on loneliness among older individuals in England, we ask: do the foreign born and their children have higher levels of loneliness than otherwise similar individuals without a migration background, and how are differences in loneliness related to both minority and immigrant experiences? In contrast to theoretical predictions, we do not find higher loneliness among the foreign born and their descendants as compared to the white British majority. However we do find that a minoritised social position, in particular exposure to discrimination, is associated with greater loneliness among those with a migration background. Immigrants who arrived later in the life course, and originated from outside the EU, are also lonelier in older age than those born in the UK or who arrived at younger ages.

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Loneliness; older immigrants; older minorities; wellbeing; England

Introduction

Loneliness, or the 'unpleasant subjective experience that describes the deficit between desired and achieved levels of social interaction' (Victor, Burholt, and Martin 2012, 65), is a phenomenon which garners increasing research attention. This is due to an expected increase in loneliness related to population ageing (Yang and Victor 2011) and in response to the Covid-19 pandemic (Ernst et al. 2022), as well as because of its well-known association with poorer mental and physical health (Prohaska et al. 2020) and subjective well-being (Vander Weele, Hawkley, and Cacioppo 2012).

Recent research identifies experiences of migration as a major risk factor for loneliness. Several studies, for instance in Australia (Tani et al. 2022), Germany (Fokkema and Naderi 2013) and across Europe (Delaruelle 2023), describe higher levels of loneliness among the foreign born, attributed to the dislocation of social ties and exposure to xenophobia faced by international movers. A related body of literature in England

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also examines loneliness among older adults with a migration background, generally expecting higher loneliness due to socioeconomic disadvantage and cumulative exposure to discrimination but also the possibility for resilience arising from more 'collectivist' norms and values (Pan et al. 2023), exhibited as residence in ethnic enclaves and living in multigenerational households (Burholt et al. 2020; Burholt, Dobbs, and Victor 2018; Fokkema, Gierveld, and Dykstra 2013). As the foreign born and their descendants age and comprise an increasingly large proportion of older people in many western European countries – for instance, over one in ten of those older than 50 according to the 2021 Census of England and Wales – research investigating the ties between migration, old age, and loneliness is increasingly relevant. Specifically, there is a need for research that (a) uses representative data to assess whether experiences of migration are a risk factor for loneliness in England and identify which groups are most affected; and (b) distinguishes vulnerabilities to loneliness that arise specifically through international movement from those that also impact native born minorities as well (see the discussion for instance in Hayanga, Kneale, and Phoenix (2021)).

Using recently available, representative data on loneliness among older individuals in England (the country where 92% of the UK's foreign born population resides), our study responds to this need, addressing two critical questions at the 'nexus' of the sociology of ageing and sociology of migration (King et al. 2017), namely: do the foreign born and their children have higher levels of loneliness in older age than otherwise similar individuals without a migration background, and how are differences in loneliness related to their experiences as both minorities and immigrants? To answer these questions, we measure loneliness among immigrants who arrived early and later in the life course (Ma and Joshi 2022), who faced more or less restrictive migration regimes (EU v Non-EU), and compare them to those with only indirect experience of migration (the second generation, or UK born children of immigrants), as well as to the white British majority with no migration background (the native majority). We next assess the influence of well-researched challenges faced by *minoritised groups*, including socioeconomic disadvantage and exposure to discrimination, as well as potential sources of resilience including multigenerational living situations (Burholt, Dobbs, and Victor 2018) and access to co-ethnic support for those residing in ethnically concentrated enclaves (Bécares, Nazroo, and Stafford 2009). Our study further applies an *international* (i.e. migration) perspective to the study of loneliness among the foreign born, testing for the impact of transnational separation, smaller local social networks, and restrictions to international movement.

In response to our first question, we find little difference in loneliness between those with a migration background and those without, with the exception of non-EU foreign born who arrived in later adulthood (after 40). Our study thus deviates from earlier smaller scale studies on loneliness among immigrants in England (Victor, Burholt, and Martin 2012), as well as in other countries such as Canada (De Jong Gierveld, Van der Pas, and Keating 2015) – but does corroborate more recent research from the self-selected internet survey from the BBC Loneliness Experiment, which also finds no difference in loneliness between immigrants and non-migrants aged 55 and older (Pan et al. 2023). Turning to our second question, we find that while socioeconomic disadvantage is associated with loneliness in older age, it does not lead to differences in loneliness between immigrants of different origins and experiences of migration. Rather, it is

specifically discrimination, as well as smaller networks and separation from friends, that helps explain some of the higher loneliness experienced by non-EU late-arrivers. Whereas residing in ethnic enclaves is protective against loneliness among the foreign born and their descendants, living in multigenerational households does not appear to reduce loneliness among older adults with or without migration experience, contrary to expectations derived from previous research.

In sum, the immigrant loneliness disadvantage expected from the literature may not apply here because the current population of older adults with a migration background in England is something of a special case: this group is less socioeconomically disadvantaged relative to the native majority than in many other countries, having broad access to healthcare and other social benefits. The older adults we focus on here will have also enjoyed exposure to a more generous migration policy regime with easier family reunification and mobility opportunities than that currently facing immigrants to England. Therefore, the loneliness gap observed in other countries and with older, more targeted samples in England is not found here – rather, the results of our study correspond with more recent research from the BBC Loneliness Experiment (Pan et al. 2023), corroborating this non-representative study with a larger sample allowing for finer distinctions by immigration-related characteristics such as time of arrival and cross-national ties.

Background

The experience of migration and loneliness in later life

Several reviews identify social dislocation, exposure to discrimination, and barriers to services as risk factors associated with international movement that may increase loneliness among older adults (Burholt et al. 2020; Ma and Joshi 2022). The degree to which these issues will affect an individual are likely to vary however depending on the timing and exposure to migration and the relationship between the immigrant sending and receiving country. In terms of timing of migration, at the core are three groups of particular interest: older people who migrate after family formation would have normally occurred, for instance after the age of 40; younger adults who migrate for work or education earlier in the life course and who reach old age at particular destinations; and finally those who are born in the receiving country or migrate alongside their parents before reaching adulthood (Warnes and Williams 2006; King et al.2017).

The children of immigrants born in the destination country or those who migrate at an early age are less likely to experience a major disruption in their familial or social networks: younger immigrants form families in the receiving country and are thus less likely to be separated from partners or children, and in the case of adolescent or child immigrants, are also less likely to be separated from their own parents. They are also more likely to perceive the receiving country as 'home' and have culturally and linguistically adapted to their current country of residence (Nandi and Platt 2015), potentially leading to stronger local social ties. Those born in the UK or who migrated at younger ages are further expected to be more similar to the those without a migration background in economic terms, as immigrants who arrived at younger ages will have UK qualifications, a full UK work history, and should thus experience better outcomes in the

labour market and qualify for a full state pension (see for instance Bridgen, Meyer, and Davison. 2023 which shows that later arriving immigrants in the EU receive lower returns on education and thus less pension).

A second key factor is the relationship of the sending country to the receiving country, both in terms of the migration regime and cultural and linguistic distance. For both, a key difference in the UK context (at least prior to the 2016 Brexit Referendum) is between intra-EU and 'third-country' migration. In this case, both state policy and geographic proximity have the potential to moderate the effect of international migration on older age loneliness. Intra-EU migration is geographically closer, and cheap travel to common sending countries across Western and Eastern Europe have become ubiquitous. The lower restrictions to transnational connections in terms of both time and money were mirrored in lower bureaucratic hurdles, thanks to visa-free travel and unlimited-time visitation rights, resulting in less traditional international migration experiences that more closely tracked those of internal migrants (Engbersen and Snel 2013). Intra-EU migrants are also likely to benefit from greater cultural similarity to the UK, which has been shown to reduce loneliness among migrants in Canada (De Jong Gierveld, Van der Pas, and Keating 2015) and the Netherlands (Ten Kate, Bilecen, and Steverink 2020).

We therefore expect that:

H1A: Immigrants and their descendants will experience greater loneliness than the native majority with no immigration background.

H1B Immigrants who arrive later in the life course will experience greater loneliness than those who arrive earlier in the life course and the second generation.

H1C: Immigrants and their descendants who experienced more restrictive migration regimes, travelled greater distances, and are generally more culturally distinct (non-EU) will have higher levels of loneliness than those from countries that have historically enjoyed freer movement and share a more similar culture to the UK (EU immigrants).

Explaining loneliness: the minority and the international perspective

After first assessing whether a loneliness penalty exists for immigrants and their descendants in relation to the native majority without a migration background, we next explore variation *within* the subpopulation with exposure to migration. We draw on two related strands of literature on immigrant inequalities that are often applied in parallel, and rarely applied to older populations (Bécares, Kapadia, and Nazroo 2020). The first strand focuses on the experiences of older immigrants specifically as *minorities,* in the sense of *minoritised* by 'systemic inequalities, oppression, and marginalization [that] place individuals into "minority" status' (Sotto-Santiago 2019, 73). This body of literature applies to both the foreign born and their descendants and points to the detrimental impact of cumulative exposure to poor residential and working conditions as well as lifelong experiences of discrimination, but also highlights sources of potential resilience to disadvantage among many minority groups, such as higher rates of multigenerational households as well as higher levels of social capital within ethnic enclaves (Bécares and Nazroo 2015).

A second strand focuses on the experience of immigrants as *migrants* who have crossed *international* borders. This experience brings with it unique challenges, as well

as potential advantages. On the one hand, crossing national borders may create barriers to social integration and access to health care, especially for the foreign born from further afield who may more culturally or linguistically dissimilar (De Jong Gierveld, Van der Pas, and Keating 2015), as well as for those who migrated at older ages and thus have less time to rebuild ruptured social relationships (Burholt et al. 2020). On the other hand, foreign-born individuals who choose and are able to move may be especially resilient in terms of physical and mental health (Markides and Rote 2019; Wallace and Kulu 2014), may benefit from socialisation in more collective cultures in their sending countries (Burholt, Dobbs, and Victor 2018), or may be exercising agency in their choice of residence and benefiting from an improved lifestyle in terms of their economic or social position (King et al. 2017).

Migration and minority status

Most of the research on loneliness among older immigrants in England applies the minority perspective: this research highlights the experiences of immigrants (and their descendants), usually identified via self-reported ethnic categorisation, who were part of the earlier waves of post-colonial migration following WWII. In addition to facing typical life course challenges related to older ages, such as poorer health or greater social isolation due to retirement and empty nests, many of these immigrants and their descendants were further disadvantaged by lifelong exposures to discrimination, obstructed work and educational opportunities, and a greater likelihood of residing in economically deprived localities. For instance Indian, Pakistani, Bangladeshi, Black Caribbean and Black African groups are at least twice as likely to live in the most economically deprived neighbourhoods relative to the White British majority (Bécares et al. 2011). Related to concentrations in more deprived areas, other research has shown that these same groups experience poorer housing quality, insecure tenures and greater overcrowding (Shankley and Finney 2020), situations which can make it hard to entertain at home, increase stress and lead to greater social isolation (Carbone et al. 2022; Kearns et al. 2015). Although labour market performance varies by national origins and gender, on the whole ethnic minorities have longer unemployment spells (Longhi 2020) and lower wages with cumulative, negative effects on their financial security over the life-course (Li and Heath 2020). Economic deprivation, and the poorer material conditions it leads to (above and beyond housing), has been shown to have a strong and significant relationship to loneliness among older adults across Europe (Myck, Waldegrave, and Dahlberg 2021).

A further potential source of greater loneliness in older age among minoritised immigrants is exposure to discrimination. A meta-analysis of employment field experiments in the UK found evidence of enduring discrimination against both white and non-white minority groups between 1969 and 2017, with no reduction in gaps in call-back rates for jobs for either Caribbean or South Asian groups even over this long period of time (Heath and Stasio 2019). Self-reports of experiences of ethnic and racial harassment similarly show continuity, for example, between the Fourth National Survey of Ethnic Minorities in 1994 and more recent data from the early 2010s (Nandi and Luthra 2016). The stress associated with experiences of discrimination, which are both unpredictable and unpreventable for many minorities, is linked to poorer physical and mental health through both psychological (self-control) and physiological (blood pressure) mechanisms (Brondolo et

al. 2011; Pascoe and Richman 2009). Research in the US context shows a strong association between experiences of everyday racial and ethnic discrimination and loneliness among older adults (Sutin et al. 2015), and that this especially pronounced for older adults with lower levels of education (Lee and Bierman 2019).

Despite these disadvantages in exposure to discrimination and socioeconomic vulnerability, the minority perspective also points to potential sources of resilience that may counteract this vulnerability. First, many older immigrants and their descendants in England stem from societies with stronger values of familial interdependence (Inglehart 2020), such as India, China or Pakistan, where family-provided elder care and multigenerational households are normative (Fang and Yang 2023). If stronger norms of family-provided care are 'imported' by the foreign born *and* practiced by their descendants residing in the UK, then we may anticipate lower levels of loneliness among immigrants and the second generation. Second, another potential source of greater social support and resilience to loneliness may arise from residence in an ethnic enclave. Earlier research found a negative association between living in areas with a higher density of residents of the same ethnicity and common mental disorders among minorities in the UK (Das-Munshi et al. 2010), as well as a buffering effect on mental health against experiences of discrimination (Bécares, Nazroo, and Stafford 2009). There is also some evidence from Canada that immigrants living in ethnic enclaves experience greater social support and lower levels of loneliness (Tseng et al. 2021).

Taken as a whole, the minority perspective thus suggests that socioeconomic disadvantage, exposure to discrimination, multi-generational households and residence in co-ethnic communities may help explain variation among immigrants and their descendants, and especially between those with EU vs non-EU origins:

H2: Socioeconomic disadvantage (low educational attainment, low occupational attainment, and local area deprivation) will increase loneliness among immigrants and their descendants.

H3: Exposure to self-reported discrimination will increase loneliness among immigrants and their descendants.

H4: Residence in a multigenerational household will reduce loneliness among immigrants and their descendants.

H5: Residence in a local area with a greater representation of co-ethnic neighbours will reduce loneliness among immigrants and their descendants.

An international perspective on inequalities among older immigrants

Alongside examinations of loneliness among older immigrants as ethnic minorities, a parallel literature broadens the view from inequalities within the receiving country to consider inequalities arising specifically from the experience of international migration itself (Albertini, Mantovani, and Gasperoni 2019; Luthra, Waldinger, and Soehl 2018). A first insight from this perspective is the increased potential for *international* separation from family members for the foreign born. Entire families rarely move abroad at once: the likelihood of immigration is highest among young adults, many of whom migrate alone leaving their family of origin behind; slightly older migrants may have already formed their own nuclear families and have left spouses or some children to be raised

by family members at home. Although separation from family members due to geographic mobility is increasingly common in the UK as a whole (Chan and Ermisch 2015), international separation creates unique challenges. The first is the greater geographic distance, in particular for non-EU migrants for whom international separations cannot be transversed by car alone. The second is that separation can also be exacerbated by state policy. A large body of qualitative literature documents how increasingly securitised borders create obstacles to international movement, reducing the possibility of shorter term visits and face to face contact that is important to maintaining social ties and providing transnational care (Merla, Kilkey, and Baldassar 2020). The impact of transnational families varies across the life cycle, often becoming particularly consequential at older ages as the need for physical presence becomes more acute (Bryceson 2019).

A resulting increase in loneliness is likely to be exacerbated if immigrants also have smaller local friendship networks. Distance and international borders do not only separate family members, they also separate friends. The primary life course stage for developing close informal ties is the early twenties (Ang 2019), so separation from friends and a stunted development of deep local ties is especially likely for immigrants who migrate at older ages. For example, using the same data we use here, Hayanga, Kneale, and Phoenix (2021) demonstrates that Black and Minority Ethnic older people report having fewer closer friends, though they do not directly measure the role that migration may play in explaining this, nor do they show how it may go on to effect other outcomes such as loneliness.

We therefore expect that greater social disruption may help explain greater loneliness among immigrants who arrived later in the life course, and between those experiencing more (non-EU) vs less (EU) restrictive migration regimes:

> H6: Living further away from family and friends will increase loneliness among immigrants and their descendants.

Another international influence is the selective nature of migration itself, and the potentially countervailing protective association between positive immigrant selectivity and loneliness in older ages. The decision and ability to immigrate is not randomly distributed across sending country populations: as already mentioned, younger individuals are more likely to migrate than older ones, and other research also finds that immigrants to the UK are more highly educated than non-migrants in their sending countries (Luthra and Platt 2023), as well as healthier and with better health behaviours (such as lower rates of smoking and drinking) than otherwise similar White British majority populations (Kennedy et al. 2015; Luthra, Nandi, and Benzeval 2020). This (usually unobserved) selectivity has been linked to an 'immigrant paradox,' whereby the foreign born display better health outcomes (for instance age-adjusted mortality) than would be expected given their socioeconomic disadvantage and exposure to discrimination (Ichou and Wallace 2019), although there is some evidence that this advantage declines in older ages (Wallace and Kulu 2014). Given the well-documented associations between education, physical health and loneliness in older ages (Tani et al. 2022; Victor et al. 2005), we might expect positive selectivity to be protective against loneliness for foreign born ethnic minority members:

> H7: Better health, and higher levels of education, will reduce loneliness among immigrants and their descendants.

Data and methods

Data

We use data from wave 9 of the UK Household Longitudinal Study (UKHLS, also known as Understanding Society) (University Of Essex Institute For Social and Economic Research 2023), restricting the sample to respondents aged 50 or older[1] who currently reside in England, where 92% of the UK foreign born population resides, to allow for linking with the 2011 Census. Understanding Society is a large-scale panel household survey conducted yearly in the UK since 2009, which includes two probability samples of the whole UK population (the General Population Sample and the British Household Panel sample), and an Ethnic Minority Boost (EMB) introduced in wave 1 and an Immigrant and Ethnic Minority Boost (IEMB) introduced in wave 6. The EMB and IEMB both target individuals of Indian, Bangladeshi, Pakistani, Black Caribbean, or Black African descent, and the IEMB additionally targets any foreign-born individual. The fieldwork for wave 9 lasted from January 2017 until May 2019, and this is the first wave with loneliness information available. Permission to use the Special Licence dataset SN 6931, which contains lower-level geographic indicators, was obtained from the UK Data Service on 21 December 2023 (Project 253387).

After excluding individuals younger than 50 and those with missing information on key variables (see Table A1 in the Appendix for details), our analytical sample includes 8,570 individuals, of which 6,702 UK natives without an immigrant background, 346 second-generation individuals, and 1,522 foreign-born individuals. Wave 9 cross-sectional self-completion weights are used with the Stata 18 suite of svy commands.[2]

Variables

The dependent variable is *loneliness*, measured through a three-item version of the UCLA loneliness scale (Russell 1996). Respondents were asked how often they feel: that they lack companionship, left out, or isolated by others. Response options range from 1 to 3 (respectively: 'hardly ever or never', 'some of the time', 'often'). Following the UK statistical office's recommendation (Snape and Manclossi 2018), responses to the three items are summed to create a total score ranging from 3 (least frequent loneliness) to 9 (most frequent loneliness), with high internal consistency (Chronbach's Alpha 0.86).

The main explanatory variable is *migration experience* [H1]. Our baseline category is native majority group members without a migration background, which we define as individuals who identify as White British, are born in the UK, and report no foreign-born parents or grandparents (4th gen+).[3] Those with an immigration background are categorised as a) the second generation, defined as individuals born in the UK with two foreign born parents, b) the 1.5 generation, those born abroad and who moved to the UK before age 18 (generation 1.5), c) individuals born abroad who immigrated to the UK between 18 and 39 (early first generation), and individuals born abroad who immigrated to the UK aged 40 or older (late first generation).[4] We further distinguish those who migrated from EU member states from those who originated from countries that did not enjoy free movement rights prior to the Referendum vote.

The control variables include the following demographic characteristics: *age* (centred on age 50, treated as continuous, and with a quadratic term), *sex* (binary), *marital status*

(married/cohabiting, widowed, separated/divorced, never married) and *living with own children younger than 21*.

We include several groups of independent variables to test our hypotheses, starting with those derived from the immigrant as minority perspective, and followed by those assessing the international perspective.

Minority influences

First, we measure socioeconomic status [H2] through the *current occupation* (upper class, intermediate class, working class, unemployed, retired, family/home care, sick/disabled, other), and the *household income* (OECD equivalised net household income). We also include a measure of residential socioeconomic status at the LSOA level (approximately 800 households). This is the 2010 *index of deprivation score* (Consumer Data Research Centre 2016), a composite measure of local conditions including income, employment, education, health, crime, barriers to housing and services, and the living environment.

Second, *discrimination* [H3] is measured as a dichotomous variable indicating whether the respondent has *ever* reported having been insulted, harassed, felt unsafe or avoided places due to their ethnicity, nationality, religion, language/accent, or dress/appearance in the previous 12 months. We pool information across all available waves (3, 5, 7, and 9) in order to have non-missing information for almost all respondents in our sample.

Third, we include residing in an *extended family household* [H4] or in an area of *high co-ethnic density* [H5] as potential minority-specific resilience factors. These are measured, respectively, as whether the respondent resides with any family other than the respondent's dependent children (under age 21) and partner, and through a five category indicator for group-specific co-ethnic density quintiles in the local area computed from the 2011 Census.[5]

International influences

The international perspective switches the focus from factors within the receiving country to the immigration process itself. To examine *separation from family and friends* [H6], we include an indicator of the physical distance from the adult child that the respondent deems emotionally closest (up to one hour, more than 1 h, abroad, no adult children). We also include the wider local social networks, measured as the self-reported proportion of friends living in the local area (all, more than half, half, less than half, none) as well as the total number of close friends (0-1, 2-3, 4-5,6-9, 10+).

Next, we measure the influence of potential positive selectivity [H7] on *health* through the Short Form 12 Physical Component Summary, a multi-item measure of self-assessed physical health, and on *education* using the highest educational attainment (primary or less, less than secondary, secondary, less than tertiary, and tertiary).

Methods

Our analysis seeks to answer two questions: Do older adults with experiences of migration have higher levels of loneliness than otherwise similar individuals without a migration background? And how are experiences arising from minoritised status and

international movement related to loneliness among those with a migration background in older age?

To answer the first question, we analyse loneliness as reported by the native majority, as compared to the second generation and immigrants who arrived to the UK at different ages. Using ordinary least squares regression with robust standard errors, we regress loneliness on migration experience controlling for a basic set of demographic factors.[6]

Next, to answer our second question, we exclude the native majority from our analysis and focus on potential explanations for variation in loneliness among those with a migration background as outlined in Hypotheses 2-7. In additional analyses we also investigate their association with loneliness in the general population including the native majority group, (found in Table A4 in the Appendix). All hypotheses and their measures are summarised in Table 1 below.

Results

Descriptive statistics

Table 2 presents the characteristics of the older population in the UK by immigration experience and time of arrival, including tests for statistically significant differences from the native majority baseline. Descriptive statistics separated by EU and non-EU origins can also be found in Tables A2 and A3 in the Appendix.

We can already see here that, contrary to our expectations in H1A, immigrants and their descendants do not uniformly report higher levels of loneliness than the native majority. However, we do see that this varies by migration experience, as expected by H1B and H1C: the second generation and those who arrived after the age of 40 report higher levels of loneliness, and as we see in Tables A2 and A3 in the Appendix, these

Table 1. Hypotheses and measures.

Hypothesis		Measure
H1A	Those with migration background report higher loneliness [and lower wellbeing]	UCLA loneliness scale (Russell 1996)
H1B	Timing of Migration	1.5 generation (arrived before 18), 1st generation early (arrived 18-39), 1st generation late (arrived 40+)
H1C	Migration Regime	EU vs Non-EU Free movement
Minority Influences		
H2	Socioeconomic Disadvantage	Occupational status, equivalized household income, local area deprivation
H3	Discrimination	Experienced / anticipated ethnic or racial harassment
H4	Multigenerational Households	Extended households including family members beyond partners and children under 21
H5	Co-ethnic concentration	Quintile of group-specific co-ethnic concentration measured at the LSOA level
International Influences		
H6	Family and friend separation	Location of closest child, number and location of close friends
H7	Immigrant Selectivity	Self-rated physical health and highest educational attainment

Table 2. Descriptive statistics adults 50+ in England.

Variable	4th+ gen	2nd gen			1.5 gen			1st gen early			1st gen late		
	Mean	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p
Loneliness (3-9)	4.11	4.40	0.28	**0.01**	4.18	0.06	0.51	4.24	0.13	0.14	4.47	0.36	**0.02**
Age	66.22	58.41	−7.80	**0.00**	62.78	−3.43	**0.00**	64.57	−1.65	**0.01**	62.73	−3.48	**0.00**
Sex	0.54	0.58	0.04	0.29	0.47	−0.06	**0.03**	0.56	0.03	0.32	0.52	−0.02	0.68
Marital status													
Married/cohabiting	0.68	0.58	−0.10	**0.01**	0.68	0.00	0.97	0.68	0.00	0.97	0.74	0.06	0.12
Widowed	0.13	0.04	−0.09	**0.00**	0.08	−0.05	**0.00**	0.12	−0.01	0.74	0.08	−0.05	**0.04**
Separated/divorced	0.12	0.14	0.02	0.39	0.14	0.02	0.33	0.10	−0.02	0.28	0.13	0.01	0.66
Never married	0.08	0.24	0.17	**0.00**	0.11	0.03	0.07	0.10	0.02	0.16	0.05	−0.03	0.15
Children <21 yo in HH (dummy)	0.10	0.27	0.17	**0.00**	0.13	0.03	0.10	0.21	0.11	**0.00**	0.19	0.09	**0.01**
Occupational status													
Upper class	0.17	0.33	0.16	**0.00**	0.25	0.09	**0.00**	0.21	0.04	**0.05**	0.22	0.06	0.15
Intermediate	0.15	0.22	0.08	**0.01**	0.17	0.02	0.31	0.15	0.00	0.82	0.20	0.05	0.21
Working class	0.07	0.08	0.02	0.46	0.09	0.03	0.12	0.08	0.01	0.39	0.21	0.15	**0.00**
Unemployed	0.01	0.06	0.04	**0.01**	0.04	0.02	**0.05**	0.03	0.02	**0.01**	0.03	0.01	0.24
Retired	0.55	0.23	−0.32	**0.00**	0.39	−0.16	**0.00**	0.46	−0.09	**0.00**	0.26	−0.29	**0.00**
Family care or home	0.02	0.03	0.01	0.39	0.03	0.01	0.22	0.04	0.02	**0.01**	0.06	0.04	**0.05**
LT sick or disabled	0.03	0.04	0.01	0.66	0.02	−0.01	0.13	0.03	0.00	0.70	0.02	−0.02	**0.04**
Other	0.01	0.01	0.00	0.90	0.00	−0.01	**0.05**	0.00	0.00	0.12	0.00	0.00	0.44
Income quintiles													
Bottom	0.18	0.12	−0.06	**0.01**	0.15	−0.02	0.27	0.23	0.05	**0.02**	0.21	0.03	0.37
2nd	0.19	0.20	0.01	0.78	0.19	0.00	0.84	0.19	0.00	0.99	0.24	0.05	0.21
3rd	0.19	0.19	−0.01	0.79	0.15	−0.04	0.06	0.18	−0.01	0.57	0.12	−0.07	**0.01**
4th	0.22	0.22	0.00	0.87	0.19	−0.03	0.27	0.20	−0.02	0.36	0.18	−0.03	0.38
Top	0.22	0.27	0.05	0.13	0.31	0.09	**0.00**	0.20	−0.02	0.26	0.24	0.02	0.65
Local deprivation index	18.35	23.02	4.66	**0.00**	21.61	3.25	**0.00**	23.58	5.23	**0.00**	26.53	8.17	**0.00**
Local share of coethnics (quintiles)													
Bottom	0.15	0.22	0.06	**0.05**	0.30	0.15	**0.00**	0.20	0.05	**0.04**	0.23	0.07	0.10
2nd	0.19	0.24	0.05	0.10	0.21	0.03	0.26	0.22	0.03	0.13	0.17	−0.02	0.66
3rd	0.21	0.19	−0.02	0.52	0.20	−0.01	0.64	0.18	−0.03	0.15	0.14	−0.07	**0.02**
4th	0.22	0.17	−0.05	**0.04**	0.14	−0.09	**0.00**	0.19	−0.04	0.06	0.22	0.00	0.92
Top	0.23	0.19	−0.04	0.24	0.15	−0.08	**0.00**	0.21	−0.02	0.36	0.24	0.02	0.65
Discrimination	0.00	0.11	0.11	**0.00**	0.14	0.13	**0.00**	0.21	0.21	**0.00**	0.24	0.24	**0.00**
Extended household	0.19	0.32	0.13	**0.00**	0.34	0.15	**0.00**	0.34	0.15	**0.00**	0.45	0.26	**0.00**
Distance to child													
Up to 1h	0.62	0.49	−0.13	**0.00**	0.63	0.01	0.73	0.50	−0.12	**0.00**	0.41	−0.21	**0.00**

(*Continued*)

Table 2. Continued.

Variable	4th+ gen	2nd gen			1.5 gen			1st gen early			1st gen late		
	Mean	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p
More than 1h	0.16	0.12	−0.04	0.08	0.16	0.00	0.92	0.18	0.02	0.24	0.17	0.01	0.74
Abroad	0.02	0.02	0.00	0.83	0.03	0.01	0.38	0.05	0.03	**0.00**	0.22	0.20	**0.00**
No adult children	0.21	0.37	0.16	**0.00**	0.18	−0.02	0.37	0.27	0.06	**0.01**	0.20	−0.01	0.83
Close friends													
0 or 1	0.09	0.06	−0.03	0.09	0.07	−0.02	0.25	0.11	0.03	0.10	0.12	0.03	0.24
2 or 3	0.27	0.30	0.02	0.48	0.26	−0.02	0.48	0.30	0.03	0.26	0.32	0.05	0.26
4 or 5	0.25	0.34	0.08	**0.02**	0.29	0.04	0.17	0.31	0.05	**0.03**	0.31	0.06	0.20
6–9	0.21	0.19	−0.02	0.47	0.18	−0.03	0.17	0.12	−0.09	**0.00**	0.10	−0.10	**0.00**
10+	0.18	0.12	−0.06	**0.04**	0.21	0.03	0.30	0.16	−0.02	0.24	0.14	−0.04	0.31
Friends in local area													
All are in the local area	0.19	0.11	−0.09	**0.00**	0.14	−0.06	**0.01**	0.14	−0.06	**0.00**	0.07	−0.13	**0.00**
more than half	0.38	0.29	−0.09	**0.01**	0.29	−0.09	**0.00**	0.24	−0.13	**0.00**	0.19	−0.19	**0.00**
about half	0.19	0.16	−0.03	0.23	0.18	0.00	0.84	0.15	−0.04	**0.02**	0.18	−0.01	0.83
less than half	0.20	0.36	0.16	**0.00**	0.31	0.11	**0.00**	0.36	0.16	**0.00**	0.41	0.21	**0.00**
or none?	0.04	0.09	0.05	**0.01**	0.07	0.03	**0.02**	0.12	0.08	**0.00**	0.15	0.11	**0.00**
SF-12 Physical Component Summary (PCS)	45.65	47.74	2.09	**0.01**	46.78	1.14	0.09	44.79	−0.86	0.17	46.89	1.25	0.24
Educational attainment													
Prim or Less	0.01	0.00	−0.01	**0.00**	0.02	0.01	0.20	0.08	0.07	**0.00**	0.06	0.05	**0.01**
LT Secondary	0.33	0.21	−0.12	**0.00**	0.24	−0.09	**0.00**	0.17	−0.16	**0.00**	0.12	−0.21	**0.00**
Secondary	0.26	0.27	0.01	0.86	0.29	0.03	0.27	0.27	0.01	0.66	0.26	0.00	0.95
L/t Tertiary	0.21	0.22	0.01	0.63	0.17	−0.04	0.10	0.16	−0.04	**0.02**	0.21	0.01	0.89
Tertiary	0.20	0.31	0.11	**0.00**	0.29	0.09	**0.00**	0.32	0.12	**0.00**	0.35	0.16	**0.00**
Non-EU/EEA origin	0.00	0.84	0.84	**0.00**	0.80	0.80	**0.00**	0.81	0.81	**0.00**	0.85	0.85	**0.00**
Observations	6702		346			554			763			205	

higher levels of loneliness are only found among immigrants and the second generation who originate from outside the EU. Although the smaller numbers of those from the EU warrant some caution in interpretation (33 EU second generation and 25 EU late-arrivers), we can see that immigrants and their descendants from the EU generally report *lower* levels of loneliness than the native majority.

Turning to the other characteristics, we see that immigrants and their descendants are generally somewhat younger and more likely to have dependent children still in the household. The second generation is also substantially more likely to be never married than the other groups. In terms of socioeconomic status, again somewhat contrary to our expectations, we see that in our recent and nationally representative data, immigrants and their descendants are not disadvantaged overall – they are more likely to be in upper-level occupational positions, and report similar income distributions as the native majority.[7] They do, however, reside in somewhat more disadvantaged neighbourhoods than the native majority.

The next measure drawn from the minority perspective is discrimination. We see that immigrants who arrived as adults are more likely to report harassment or fear due to their race, ethnicity, nationality, religion or appearance – nearly one in four report such experiences, as compared to less than one in eight among the second generation. Non-EU immigrants are particularly impacted. As a source of potential resilience, however, especially non-EU immigrants and their descendants are also much more likely to reside in multigenerational homes: one in three of those with a migration background lives with extended family or adult children, as compared to only one in five among the native majority.

Next, we examine measures derived from the international perspective. We see that immigrants who arrived as adults, and especially as older adults, are more likely to live further away from their adult children – this is especially true for later arriving non-EU immigrants, with nearly one in four reporting their closest child lives abroad. All immigrants and their descendants are also less likely to have most or all their friendship network living nearby.

Finally, turning to measures of immigrant selectivity, as might be expected given their older ages and longer time living in the UK, we do not observe a physical health premium for immigrants or their descendants. Their positive selection in terms of education is still very visible, however: the foreign born and their children are between ten and sixteen percentage points more likely to have a tertiary degree, and less likely to have less than secondary levels of education, than the native majority.

In sum, this discussion of the descriptive statistics already suggests that the case of older immigrants and their descendants in England might not conform to the full set of expectations derived from either the minority or the international perspectives. Although they are not socioeconomically disadvantaged on average, they do face discrimination, especially for those born outside the EU. Immigrants, especially those who arrive later in the life course, are more likely to be separated from family and friends, yet they do not seem to report the higher levels of loneliness that we might expect would accompany this separation.

To further examine the possibility of a loneliness disadvantage among immigrants and their descendants [H1A-H1C], we next report loneliness prevalence after adjusting for the demographic differences noted above.

Loneliness prevalence

Figure 1 displays the immigrant-native gaps in loneliness after adjusting for age, sex, marital status and presence of dependent children in the household. As already seen in the descriptive statistics, only later arriving non-EU immigrants have higher levels of loneliness than the native majority. For the non-EU second generation, accounting for demographic characteristics fully explains the greater loneliness observed in the descriptive statistics.

Having assessed H1, we next examine whether the minority or international perspectives shed light on variation in loneliness among the foreign born and their descendants, as expected in Hypotheses 2-7.

Predicting loneliness: minority and international perspectives

Table 3 reports the results of a series of regressions of migration experience on loneliness. These models are restricted only to immigrants and their descendants. We add each of the minority and international measures one at a time, to assess their additive association with loneliness, before including all the measures in a single model together. For completeness, we also include regression results from identical models including the native majority group in Table A4 in the Appendix.

Beginning with *minority influences*, we first observe the inclusion of socioeconomic deprivation [H2] in model 2 of Table 3. As we might expect, those who are long term sick or disabled or caring for the family, rather than retired or in a higher status occupation, report higher levels of loneliness on average. Against our expectations, however, there is no association between loneliness and household income or local area deprivation as measured by the Index of Multiple Deprivation. Examining the next factor emphasised by the minority perspective, exposure to racial and ethnic hostility [H3], we see in model 3 that immigrants and their descendants who report

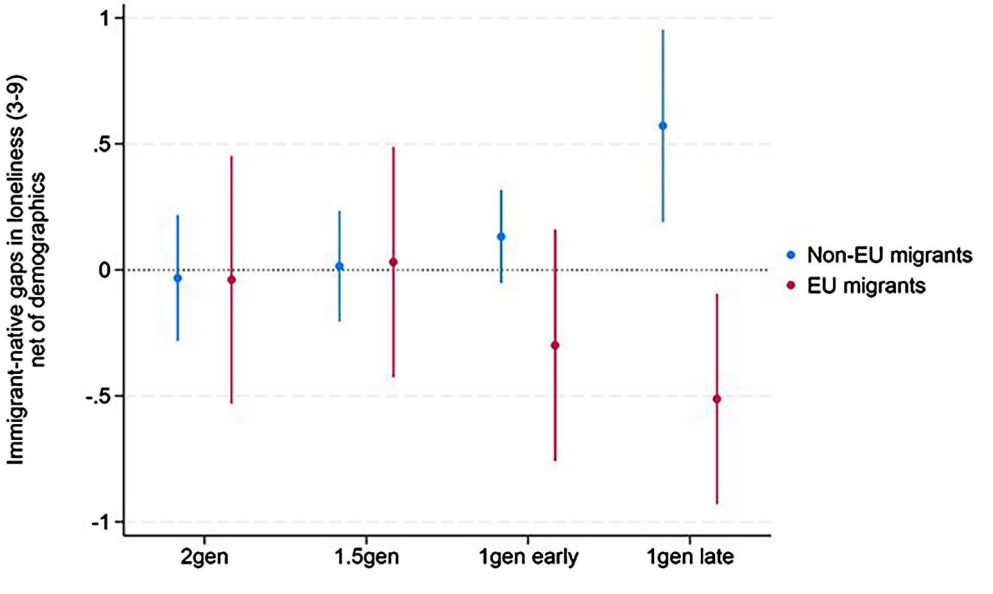

Figure 1. Immigrant-native gaps in loneliness net of demographics, by migration regime.

Table 3. Loneliness regressed on migration experience and minority and international influences (omitting native majority).

	M1		M2		M3		M4		M5		M6		M7		M8		M9	
Migrant generation (RF:2nd gen non EU)																		
2nd gen EU	−0.07	(−0.28)	−0.05	(−0.19)	−0.05	(−0.19)	−0.07	(−0.27)	−0.08	(−0.31)	−0.06	(−0.23)	−0.06	(−0.25)	−0.03	(−0.13)	0.03	(0.13)
1.5 gen non EU	−0.04	(−0.25)	−0.01	(−0.08)	−0.07	(−0.44)	−0.05	(−0.28)	−0.04	(−0.27)	−0.06	(−0.34)	−0.03	(−0.17)	−0.04	(−0.24)	−0.03	(−0.21)
1.5 gen EU	−0.11	(−0.43)	−0.11	(−0.44)	−0.10	(−0.38)	−0.11	(−0.44)	−0.12	(−0.47)	−0.12	(−0.50)	−0.08	(−0.34)	−0.11	(−0.46)	−0.10	(−0.42)
1st gen early non EU	0.09	(0.62)	0.07	(0.47)	0.03	(0.23)	0.09	(0.58)	0.11	(0.75)	0.09	(0.64)	0.07	(0.49)	0.08	(0.53)	0.03	(0.20)
1st gen early EU	−0.12	(−0.44)	−0.12	(−0.45)	−0.15	(−0.54)	−0.12	(−0.44)	−0.12	(−0.43)	−0.08	(−0.29)	−0.11	(−0.42)	−0.05	(−0.18)	−0.02	(−0.08)
1st gen late non EU	0.41*	(1.99)	0.43*	(2.03)	0.34	(1.62)	0.40+	(1.91)	0.45*	(2.17)	0.48*	(2.28)	0.37+	(1.74)	0.44*	(2.14)	0.45*	(2.06)
1st gen late EU	−0.33	(−1.38)	−0.39	(−1.42)	−0.33	(−1.41)	−0.33	(−1.38)	−0.36	(−1.49)	−0.28	(−1.18)	−0.32	(−1.32)	−0.31	(−1.07)	−0.30	(−1.03)
Controls																		
Age	−0.01	(−0.80)	−0.02	(−1.02)	−0.01	(−0.62)	−0.01	(−0.79)	−0.01	(−0.77)	−0.01	(−0.88)	−0.01	(−0.70)	−0.01	(−0.86)	−0.02	(−0.93)
Age squared	−0.00	(−0.25)	−0.00	(−0.13)	−0.00	(−0.30)	−0.00	(−0.21)	−0.00	(−0.31)	−0.00	(−0.23)	−0.00	(−0.45)	−0.00	(−0.67)	−0.00	(−0.53)
MarStat.(RF: MR/CB)																		
Widowed	0.44*	(2.14)	0.39+	(1.93)	0.44*	(2.15)	0.44*	(2.13)	0.45*	(2.17)	0.43*	(2.11)	0.45*	(2.19)	0.35+	(1.84)	0.38+	(1.94)
Separated/divorced	0.66***	(4.11)	0.53***	(3.34)	0.64***	(3.96)	0.66***	(4.12)	0.66***	(4.05)	0.67***	(4.15)	0.65***	(3.97)	0.66***	(4.23)	0.57***	(3.54)
Never married	0.95***	(4.82)	0.81***	(3.93)	0.93***	(4.74)	0.95***	(4.82)	1.01***	(5.12)	0.99***	(5.05)	0.92***	(4.70)	0.91***	(4.62)	0.87***	(4.39)
Household child under 21	−0.04	(−0.31)	−0.06	(−0.45)	−0.06	(−0.45)	−0.05	(−0.37)	−0.02	(−0.16)	−0.06	(−0.41)	−0.03	(−0.19)	−0.03	(−0.18)	−0.03	(−0.19)
OccStat.(RF: Upr.)																		
Intermediate			0.02	(0.15)													−0.04	(−0.23)
Working class			−0.04	(−0.23)													−0.18	(−0.95)
Unemployed			0.48+	(1.77)													0.33	(1.28)
Retired			0.11	(0.72)													0.07	(0.42)
Family care or home			0.30	(1.10)													0.17	(0.58)
LT sick or disabled			1.20*	(2.13)													0.97+	(1.80)
Other			−0.17	(−0.33)													0.01	(0.02)
Income quint (RF=1st)																		
2nd			0.10	(0.55)													0.04	(0.21)
3rd			−0.21	(−1.22)													−0.21	(−1.22)
4th			−0.03	(−0.18)													−0.00	(−0.01)
5th			−0.26	(−1.56)													−0.18	(−1.03)
IMD 2010 adjusted			−0.00	(−0.13)													−0.00	(−0.55)
Perceived discrimination					0.38**	(2.74)											0.34*	(2.55)
Extended household							0.06	(0.62)									0.08	(0.77)
Co-eth. quint (RF=1st)																		
2nd									0.00	(0.01)							−0.00	(−0.02)
3rd									−0.17	(−1.07)							−0.19	(−1.20)

(*Continued*)

Table 3. Continued.

	M1	M2	M3	M4	M5	M6	M7	M8	M9
4th					−0.12 (−0.79)				−0.13 (−0.83)
5th					−0.29 (−1.73)				−0.30 (−1.70)
					+				+
Child dist. (ref: up to 1hr)									
More than 1 hr						0.03 (0.21)			0.15 (1.13)
Abroad						−0.37* (−1.98)			−0.26 (−1.38)
No adult children						−0.15 (−1.23)			−0.04 (−0.30)
Close friend (ref: 0/1)									
2 or 3							−0.18 (−0.89)		−0.11 (−0.54)
4 or 5							−0.45* (−2.24)		−0.34 (−1.66)
									+
6–9							−0.36 (−1.65)		−0.27 (−1.21)
							+		
10+							−0.51* (−2.42)		−0.34 (−1.57)
Frnd. same area (ref: all)									
more than half							0.05 (0.29)		0.19 (1.10)
about half							0.11 (0.63)		0.32+ (1.81)
less than half							0.07 (0.42)		0.27 (1.55)
or none?							0.09 (0.45)		0.26 (1.24)
SF12 PCS								−0.02*** (−3.78)	−0.01* (−2.51)
Edu Att.(RF: tert)									
LT Secondary								0.09 (0.33)	0.12 (0.40)
Secondary								0.06 (0.21)	0.06 (0.21)
L/t Tertiary								0.00 (0.02)	0.03 (0.11)
Tertiary								−0.24 (−0.90)	−0.27 (−0.91)
Constant	4.18*** (23.06)	4.26*** (15.90)	4.13*** (22.85)	4.16*** (22.72)	4.26*** (21.01)	4.24*** (22.47)	4.44*** (15.15)	5.19*** (13.22)	5.05*** (9.87)
Observations	1868	1868	1868	1868	1868	1868	1868	1868	1868

Notes: t statistics in parentheses. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

discrimination also report greater loneliness, and that this association is approximately half the size of being unpartnered, rather than in a marriage – a sizeable effect.

In models 4 and 5 we next introduce measures of potential sources of resilience derived from the minority perspective, namely residence in extended family households and in areas of higher co-ethnic concentration. We see that, contrary to our expectation in H4, there is no association between residing in an extended household and loneliness. However, we do see the expected negative association between residing among co-ethnics and loneliness for immigrants and their descendants [H5] – approximately one third of a point lower on the loneliness scale for those in the highest relative to the lowest quintiles of co-ethnic concentration – albeit only statistically significant at the 0.1 level.[8]

In sum, we see that both household and local deprivation appear to matter less than we might expect for loneliness among those with a migration background in the UK, however experiences of discrimination are associated with higher loneliness, and living among co-ethnics is protective against loneliness. Moreover, when we compare the coefficients for older adults with differing timing of immigration, we also see that only discrimination actually accounts for the higher loneliness reported by the non-EU foreign born – the coefficient for this group is reduced slightly from model 1 to model 3, but remains unchanged after the inclusion of the other minority characteristics.

Turning to the *international perspective,* we observe that the only immigrant origin group that suffers from higher loneliness is those originating from non-EU countries who arrived after the age of 40. They are more lonely than both the native majority and late arrivers from EU countries. These difference by time of arrival and migration regime hold even after socioeconomic and demographic controls.

In model 6 we turn to the first characteristic emphasised by the international perspective: distance from family. We do not see the negative association between distance to the closest adult child and loneliness as expected in H6; to the contrary, loneliness is lower for those whose closest child lives abroad relative to those whose closest child lives within one hour. In model 7 we next introduce the number and location of close friends, and here the relationships are also only partially as expected: those with more friends are less lonely on average, but friendship *location* has little association with loneliness for immigrants and their descendants. Finally in model 8 we assess whether better health and higher levels of education [H7] are also associated with reduced levels of loneliness: physical health as measured by the SF-12 scale is negatively associated with loneliness, though education is not.

Model 9 reports the results from a final specification that examines the association of all characteristics with loneliness together. In this model we see that the avoidance of exposure to discrimination, living among co-ethnics, and better physical health (as evidenced by both long-term sick or disabled status as well as physical health as reported in the SF12 scale), are protective against loneliness for immigrants and their descendants. However, a residual loneliness gap remains between the non-EU late arrivals and EU migrants as well as the second generation even after this full suite of controls.

Conclusion

This paper answers the call for a more intersectional examination of ethnic inequalities in older age in the UK, especially for differences arising from the experience and timing of

international migration (Hayanga, Kneale, and Phoenix 2021; Ma and Joshi 2022). Our paper drew on two complementary perspectives that examine inequalities among immigrants, namely the perspective of immigrants-as-minorities, which understands disadvantage among the foreign born as arising from their minoritised status, like the second generation, and a second literature that examines both resilience and challenges arising from international movement itself. Separating out immigrants who arrived early and later in the life course, and comparing them to the second generation as well as the native majority, we answer two important questions at the nexus of ageing and migration research: first, do older immigrants and the second generation in the UK report higher levels of loneliness than the similarly aged native majority, and second can experiences related to minority status and international migration help us understand variation in loneliness among the foreign born and their descendants?

Our results confirmed the somewhat unexpected results of a similar study of loneliness among older adults in the UK (Pan et al. 2023), but with greater nuance and nationally representative data. Similar to this study, we did not find a clear difference in loneliness among older adults with or without a migration background. However, we do observe higher levels of loneliness among later arrivals for those who originated from outside the EU. This may be partially attributable to greater cultural difference as expected by Pan et al. (2023) in the UK as well as demonstrated by De Jong Giervald and co-authors in Canada. Importantly, the fact that higher levels of discrimination explains some of the greater loneliness of non-EU immigrants points to the intersection of cultural distance with potentially physically observable differences (such as race and other markers of ethnic difference) in driving greater discrimination, and thus greater loneliness, in older ages.

Turning to our second analysis, which sought to understand variation in loneliness specifically among the foreign born and their descendants, we found some support for both the minority and international perspectives. As expected by the minority perspective, alongside vulnerability due to discrimination, residence in the areas of the highest quintile of co-ethnic concentration serves as a source of resilience for immigrants and the second generation. Drawing from the international perspective, the timing of migration, and migration regime that immigrants and their descendants are exposed to, are important sources of variation in loneliness: those who migrate later in the life course and face higher barriers to movement are also lonelier in older age. However the positive educational selectivity of immigrants in England does not protect against loneliness, nor does their initially better health outcomes at arrival appear to endure in older age. Finally, while smaller social networks are associated with greater loneliness among immigrants, physical separation from friends is not. Physical separation from the closest adult child also does not explain loneliness in the way we might expect.

While it is difficult to say definitively why all our hypotheses were not substantiated, existing literature points to several possibilities. First, while extended households can provide intergenerational support and protection against loneliness, they may also be an indicator of economic need – rather than choice – and thus create friction or social strain despite greater physical proximity (Burgess and Muir 2020). The non-association between education, local deprivation and loneliness is also somewhat puzzling, but may be explained by the association of these with the fairly extensive range of individual level controls, including household income, which is not always used in other studies (Hayanga,

Kneale, and Phoenix 2021; Victor et al. 2021; Victor and Pikhartova 2020). Finally, the lack of an association between loneliness and physical distance to the closest child and friends may be the result of improved transnational communication in recent decades, in particular free international video and telephone applications (Baldassar et al. 2017). The respondents in our sample are from more recent birth cohorts than much of the existing work on loneliness in the UK and may be better able to take advantage of these developments, however more research is necessary to explore this more fully.

Overall this paper suggests that we need to rethink older immigrant origin individuals as a uniformly disadvantaged group: the experiences of loneliness, and the minority and international influences which shape this experience, vary substantially by time of arrival and national origins. In some characteristics, such as household income, educational attainment or health, older immigrants as a whole are generally *not* disadvantaged relative to the native majority in England. Moreover, we must also reconsider whether often cited sources of resilience, namely multigenerational households and migrant health selectivity, protect immigrants from loneliness in old age. As the size of the older age population with immigrant background continues to grow in many European countries, future research will need to consider both the minority and international perspectives to identify those most vulnerable to loneliness in this group.

Notes

1. We chose 50 as the lower-bound age for both pragmatic and substantive reasons. The foreign born and their descendants are significantly younger than the native majority without a migration history in the UK, and restricting the sample to 60+, in accordance with World Health Organisation and United Nations publications, would result in much smaller sample sizes. This is an issue for research on older immigrant populations in many European countries, and for this reason we also choose this cut-off to align with other research, such as seminal work using SHARE data that also uses a cut-off of 50 (Fokkema, Gierveld, and Dykstra 2013). We replicated our main results for the sample age 60 and above and the results are broadly similar, though less precisely estimated. These are found in Online Appendix A.
2. Further information on survey procedures is found in Online Appendix B.
3. Approximately 7% of the third generation who identify as White British have a foreign born grandparent, and since *Understanding Society* enables us to identify these, we choose to exclude them as they can be conceived as having indirect migration experience.
4. We chose 40 as the cut off for late migration as it would be at least 10 years prior to the observation period (50 years+) and less than 5% of all births occur to women after this age in England and Wales (https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/datasets/birthsbyparentscharacteristics). Later arrivals would have had less time to acquire new social networks, and those who migrate after family formation has occurred are more likely to have left family members behind. Migration after this age is also less common.
5. The proportion co-ethnic is measured at the LSOA level (approximately 800 households) based on the most detailed classification available in the 2011 census (which encompasses 28 countries and 10 group of countries such as EU 2001 member states, EU post-2001 member states, other European countries, Caribbean countries, Middle-East and Other Asian, Other North America, South and Central America, Antarctica and Oceania, and Other). The 28 national origins cover 91.4% of our non-native majority (4 gen+) sample. For the remaining 8.6% of the non-native majority, we use the most disaggregated measure of national origins available, generally at the regional level.

6. To test for the sensitivity of these results to different measures of inequality in later life, we also report differences estimated from OLS regression in self-reported life satisfaction and two measures of mental health (SF-12 Mental Health Component scores, and General Health Questionnaire scores – see descriptions of these and results in Online Appendix C). These results correspond to our main finding that only later arriving older immigrants have worse wellbeing than the native majority.
7. This is also reflected in the most recent Census of England and Wales, which shows that the foreign-born ages 50–65 are more highly educated, and more likely to be in professional and managerial occupations than the general population (Census 2021)
8. Note that this relationship is obscured when we include the larger native majority population in Table A4 in the Appendix.

Author contributions

CRediT: **Renee Reichl Luthra:** Conceptualization, Funding acquisition, Methodology, Project administration, Validation, Writing – original draft, Writing – review & editing; **Claudia Brunori:** Conceptualization, Formal analysis, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing; **Alessandro Ferrara:** Conceptualization, Formal analysis, Methodology, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

Data availability

The data that support the findings of this study are available from the UK Data Service under GN33428. Restrictions apply to the availability of these data, which were used under license for this study. Data are available for download at https://ukdataservice.ac.uk/ with the permission of the UK Data Service.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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Appendix

Table A1. Missing data.

Sample	Cases	Percentage of original
UKHLS aged 50+ in England excluding 3rd gen & non-white natives	9843	93%
Non-missing outcome	9783	92%
Non-missing demographics	9768	92%
Non-missing Socioeconomic variables	9566	90%
Non-missing discrimination	9507	89%
Non-missing extended household	9507	89%
Non-missing share co-ethnics	9502	89%
Non-missing share distance to child	9397	88%
Non-missing number and distance to friends	8994	85%
Non-missing physical health & educational attainment	8570	81%
Analytical sample	8570	81%

Table A2. Descriptive statistics Non-EU.

Variable	4th+ gen	2nd gen			1.5 gen			1st gen early			1st gen late		
	Mean	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p
Loneliness (3-9)	4.11	4.45	0.33	**0.01**	4.19	0.08	0.46	4.29	0.18	**0.05**	4.59	0.47	**0.00**
Age	66.22	57.07	−9.15	**0.00**	62.99	−3.22	**0.00**	63.74	−2.48	**0.00**	63.02	−3.20	**0.00**
Sex	0.54	0.58	0.05	0.27	0.47	−0.06	**0.04**	0.53	−0.01	0.83	0.50	−0.04	0.47
Marital status													
Married/cohabiting	0.68	0.56	−0.11	**0.00**	0.66	−0.02	0.62	0.69	0.01	0.59	0.72	0.04	0.32
Widowed	0.13	0.03	−0.10	**0.00**	0.09	−0.04	**0.02**	0.10	−0.03	0.06	0.10	−0.03	0.21
Separated/divorced	0.12	0.15	0.03	0.26	0.14	0.02	0.26	0.10	−0.01	0.35	0.13	0.01	0.76
Never married	0.08	0.26	0.19	**0.00**	0.11	0.03	0.08	0.11	0.03	0.08	0.05	−0.02	0.36
Children <21 yo in HH (dummy)	0.10	0.31	0.21	**0.00**	0.15	0.05	**0.02**	0.23	0.12	**0.00**	0.21	0.10	**0.01**
Occupational status													
Upper class	0.17	0.35	0.19	**0.00**	0.26	0.10	**0.00**	0.22	0.05	**0.02**	0.23	0.06	0.16
Intermediate	0.15	0.23	0.08	**0.01**	0.16	0.02	0.45	0.16	0.01	0.59	0.22	0.07	0.10
Working class	0.07	0.10	0.03	0.24	0.09	0.02	0.28	0.07	0.00	0.79	0.21	0.14	**0.00**
Unemployed	0.01	0.06	0.05	**0.01**	0.03	0.02	0.13	0.04	0.03	**0.00**	0.03	0.01	0.29
Retired	0.55	0.17	−0.37	**0.00**	0.40	−0.15	**0.00**	0.43	−0.11	**0.00**	0.26	−0.29	**0.00**
Family care or home	0.02	0.02	0.01	0.59	0.04	0.02	0.09	0.04	0.03	**0.01**	0.04	0.02	0.14
LT sick or disabled	0.03	0.05	0.02	0.47	0.02	−0.01	0.13	0.03	0.00	0.94	0.01	−0.02	**0.01**
Other	0.01	0.01	0.00	0.70	0.00	−0.01	**0.00**	0.00	−0.01	**0.00**	0.01	0.00	0.63
Income quintiles													
Bottom	0.18	0.12	−0.06	**0.00**	0.15	−0.03	0.24	0.22	0.05	**0.05**	0.23	0.06	0.17
2nd	0.19	0.19	0.00	0.96	0.19	0.00	0.93	0.18	−0.01	0.53	0.25	0.05	0.20
3rd	0.19	0.20	0.00	0.90	0.17	−0.02	0.33	0.19	0.00	0.95	0.14	−0.06	**0.05**
4th	0.22	0.22	0.01	0.80	0.17	−0.04	0.06	0.21	−0.01	0.64	0.15	−0.07	0.06
Top	0.22	0.27	0.05	0.20	0.32	0.10	**0.00**	0.20	−0.02	0.34	0.24	0.01	0.76
Local deprivation index	18.35	24.24	5.88	**0.00**	22.28	3.92	**0.00**	23.94	5.59	**0.00**	27.01	8.65	**0.00**
Local share of coethnics (quintiles)													
Bottom	0.15	0.20	0.04	0.17	0.29	0.14	**0.00**	0.19	0.03	0.16	0.19	0.03	0.50
2nd	0.19	0.23	0.05	0.15	0.21	0.02	0.39	0.21	0.02	0.41	0.17	−0.02	0.60
3rd	0.21	0.19	−0.02	0.59	0.21	0.00	0.99	0.19	−0.02	0.25	0.14	−0.07	**0.03**
4th	0.22	0.19	−0.04	0.19	0.14	−0.08	**0.00**	0.21	−0.02	0.45	0.24	0.01	0.77
Top	0.23	0.19	−0.04	0.32	0.15	−0.08	**0.00**	0.21	−0.01	0.50	0.27	0.04	0.30
Discrimination	0.00	0.13	0.13	**0.00**	0.16	0.15	**0.00**	0.23	0.22	**0.00**	0.27	0.26	**0.00**
Extended household	0.19	0.35	0.16	**0.00**	0.34	0.15	**0.00**	0.36	0.17	**0.00**	0.48	0.29	**0.00**
Distance to child													
Up to 1h	0.62	0.50	−0.11	**0.00**	0.63	0.01	0.74	0.51	−0.10	**0.00**	0.41	−0.20	**0.00**

(*Continued*)

Table A2. Continued.

Variable	4th+ gen	2nd gen			1.5 gen			1st gen early			1st gen late		
	Mean	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p
More than 1h	0.16	0.11	−0.05	**0.04**	0.17	0.01	0.77	0.19	0.03	0.17	0.18	0.02	0.66
Abroad	0.02	0.02	0.00	0.97	0.03	0.01	0.27	0.04	0.02	**0.03**	0.24	0.22	**0.00**
No adult children	0.21	0.37	0.17	**0.00**	0.18	−0.03	0.21	0.26	0.05	**0.04**	0.17	−0.04	0.33
Close friends													
0 or 1	0.09	0.06	−0.03	0.16	0.07	−0.01	0.46	0.12	0.03	0.07	0.14	0.05	0.11
2 or 3	0.27	0.31	0.03	0.37	0.25	−0.02	0.46	0.31	0.03	0.20	0.33	0.05	0.24
4 or 5	0.25	0.35	0.10	**0.01**	0.28	0.03	0.31	0.30	0.04	0.08	0.27	0.02	0.73
6–9	0.21	0.15	−0.06	**0.02**	0.18	−0.03	0.17	0.11	−0.09	**0.00**	0.09	−0.11	**0.00**
10+	0.18	0.13	−0.05	0.13	0.21	0.03	0.22	0.16	−0.02	0.44	0.17	−0.01	0.78
Friends in local area													
All are in the local area	0.19	0.09	−0.10	**0.00**	0.14	−0.06	**0.02**	0.12	−0.07	**0.00**	0.07	−0.12	**0.00**
more than half	0.38	0.27	−0.11	**0.00**	0.28	−0.10	**0.00**	0.23	−0.15	**0.00**	0.18	−0.20	**0.00**
about half	0.19	0.15	−0.04	0.15	0.19	0.01	0.82	0.14	−0.04	**0.01**	0.19	0.00	0.95
less than half	0.20	0.41	0.21	**0.00**	0.31	0.11	**0.00**	0.37	0.17	**0.00**	0.42	0.22	**0.00**
or none?	0.04	0.09	0.05	**0.02**	0.08	0.04	**0.02**	0.13	0.09	**0.00**	0.15	0.11	**0.01**
SF-12 Physical Component Summary (PCS)	45.65	48.18	2.53	**0.00**	46.62	0.98	0.19	44.72	−0.92	0.15	46.97	1.33	0.21
Educational attainment													
Prim or Less	0.01	0.00	−0.01	**0.00**	0.02	0.01	0.20	0.06	0.06	**0.00**	0.07	0.06	**0.01**
LT Secondary	0.33	0.22	−0.11	**0.00**	0.23	−0.10	**0.00**	0.17	−0.16	**0.00**	0.14	−0.19	**0.00**
Secondary	0.26	0.27	0.01	0.83	0.30	0.04	0.23	0.30	0.04	0.14	0.22	−0.04	0.38
L/t Tertiary	0.21	0.22	0.02	0.62	0.16	−0.04	0.07	0.16	−0.04	**0.02**	0.23	0.02	0.61
Tertiary	0.20	0.29	0.09	**0.01**	0.30	0.10	**0.00**	0.31	0.11	**0.00**	0.34	0.14	**0.00**
Observations	6702		313			481			681			180	

Table A3. Descriptive statistics EU.

Variable	4th+ gen	2nd gen			1.5 gen			1st gen early			1st gen late		
	Mean	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p
Loneliness (3–9)	4.11	4.13	0.02	0.93	4.11	0.00	0.99	4.02	−0.09	0.69	3.81	−0.30	0.13
Age	66.22	65.41	−0.80	0.77	61.92	−4.29	0.00	68.20	1.98	0.27	61.09	−5.13	0.02
Sex	0.54	0.55	0.01	0.89	0.47	−0.06	0.39	0.70	0.16	0.01	0.62	0.08	0.51
Marital status													
Married/cohabiting	0.68	0.67	0.00	0.97	0.73	0.06	0.38	0.61	−0.07	0.34	0.85	0.17	0.06
Widowed	0.13	0.08	−0.05	0.48	0.05	−0.08	0.00	0.24	0.11	0.09	0.00	−0.13	0.00
Separated/divorced	0.12	0.09	−0.03	0.63	0.11	0.00	0.92	0.09	−0.02	0.58	0.15	0.04	0.68
Never married	0.08	0.16	0.08	0.26	0.11	0.03	0.54	0.06	−0.02	0.54	0.00	−0.07	0.00
Children <21 yo in HH (dummy)	0.10	0.10	0.00	0.94	0.05	−0.06	0.05	0.13	0.03	0.51	0.10	0.00	0.97
Occupational status													
Upper class	0.17	0.19	0.03	0.73	0.22	0.05	0.38	0.15	−0.02	0.75	0.20	0.04	0.72
Intermediate	0.15	0.20	0.05	0.54	0.19	0.04	0.47	0.12	−0.03	0.61	0.05	−0.10	0.03
Working class	0.07	0.00	−0.07	0.00	0.13	0.06	0.22	0.11	0.04	0.27	0.24	0.18	0.10
Unemployed	0.01	0.02	0.01	0.64	0.06	0.04	0.19	0.00	−0.01	0.00	0.03	0.01	0.63
Retired	0.55	0.53	−0.02	0.85	0.37	−0.17	0.01	0.56	0.01	0.89	0.27	−0.28	0.02
Family care or home	0.02	0.05	0.03	0.46	0.00	−0.02	0.00	0.03	0.01	0.70	0.17	0.16	0.15
LT sick or disabled	0.03	0.00	−0.03	0.00	0.02	−0.01	0.63	0.02	−0.02	0.39	0.04	0.00	0.96
Other	0.01	0.01	0.01	0.63	0.01	0.00	0.72	0.01	0.00	0.71	0.00	−0.01	0.00
Income quintiles													
Bottom	0.18	0.13	−0.04	0.57	0.17	−0.01	0.87	0.26	0.08	0.21	0.06	−0.11	0.02
2nd	0.19	0.24	0.05	0.58	0.18	−0.02	0.78	0.25	0.06	0.39	0.21	0.02	0.86
3rd	0.19	0.12	−0.07	0.23	0.09	−0.11	0.00	0.14	−0.05	0.22	0.05	−0.14	0.00
4th	0.22	0.21	−0.01	0.89	0.27	0.05	0.38	0.16	−0.05	0.26	0.40	0.18	0.14
Top	0.22	0.30	0.08	0.38	0.30	0.08	0.23	0.19	−0.03	0.52	0.27	0.05	0.67
Local deprivation index	18.35	16.66	−1.70	0.51	18.87	0.51	0.85	22.01	3.65	0.09	23.75	5.40	0.28
Local share of coethnics (quintiles)													
Bottom	0.15	0.31	0.15	0.09	0.34	0.19	0.01	0.25	0.10	0.11	0.46	0.31	0.02
2nd	0.19	0.25	0.07	0.41	0.23	0.05	0.41	0.29	0.11	0.12	0.19	0.01	0.94
3rd	0.21	0.18	−0.03	0.70	0.15	−0.05	0.27	0.16	−0.04	0.35	0.13	−0.08	0.33
4th	0.22	0.09	−0.13	0.02	0.11	−0.11	0.01	0.10	−0.12	0.00	0.12	−0.10	0.24
Top	0.23	0.17	−0.05	0.47	0.15	−0.07	0.16	0.19	−0.04	0.49	0.09	−0.14	0.02
Discrimination	0.00	0.00	0.00	0.00	0.05	0.05	0.09	0.13	0.13	0.01	0.08	0.08	0.20
Extended household	0.19	0.20	0.00	0.95	0.32	0.13	0.05	0.25	0.06	0.33	0.28	0.09	0.40
Distance to child													
Up to 1h	0.62	0.43	−0.18	0.07	0.63	0.01	0.89	0.43	−0.19	0.01	0.38	−0.23	0.06

(*Continued*)

Table A3. Continued.

Variable	4th+ gen	2nd gen			1.5 gen			1st gen early			1st gen late		
	Mean	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p	Mean	Diff	p
More than 1h	0.16	0.17	0.01	0.91	0.14	−0.02	0.74	0.16	0.00	0.98	0.14	−0.02	0.85
Abroad	0.02	0.03	0.01	0.58	0.01	−0.01	0.30	0.09	0.07	0.06	0.12	0.10	0.24
No adult children	0.21	0.37	0.16	0.08	0.22	0.02	0.79	0.33	0.12	0.07	0.36	0.16	0.18
Close friends													
0 or 1	0.09	0.05	−0.04	0.29	0.05	−0.04	0.24	0.09	0.00	0.97	0.00	−0.08	0.00
2 or 3	0.27	0.25	−0.02	0.77	0.26	−0.01	0.87	0.28	0.00	0.95	0.29	0.02	0.88
4 or 5	0.25	0.26	0.00	0.97	0.32	0.07	0.32	0.34	0.09	0.18	0.55	0.29	0.02
6–9	0.21	0.38	0.17	0.10	0.19	−0.02	0.73	0.16	−0.05	0.30	0.16	−0.05	0.54
10+	0.18	0.07	−0.11	0.02	0.17	−0.01	0.88	0.13	−0.05	0.27	0.00	−0.18	0.00
Friends in local area													
All are in the local area	0.19	0.19	−0.01	0.93	0.14	−0.06	0.22	0.19	0.00	0.97	0.05	−0.14	0.01
more than half	0.38	0.37	−0.01	0.91	0.35	−0.03	0.65	0.29	−0.08	0.19	0.22	−0.15	0.13
about half	0.19	0.20	0.01	0.86	0.14	−0.05	0.33	0.17	−0.02	0.68	0.15	−0.04	0.68
less than half	0.20	0.15	−0.05	0.40	0.32	0.12	0.08	0.28	0.08	0.20	0.39	0.19	0.13
or none?	0.04	0.10	0.06	0.29	0.06	0.02	0.62	0.06	0.02	0.53	0.18	0.14	0.20
SF-12 Physical Component Summary (PCS)	45.65	45.44	−0.21	0.93	47.43	1.79	0.21	45.06	−0.59	0.74	46.43	0.78	0.83
Educational attainment													
Prim or Less	0.01	0.00	−0.01	0.00	0.02	0.01	0.66	0.12	0.11	0.02	0.00	−0.01	0.00
LT Secondary	0.33	0.15	−0.18	0.04	0.28	−0.05	0.44	0.19	−0.14	0.02	0.00	−0.32	0.00
Secondary	0.26	0.26	0.00	0.98	0.26	0.01	0.93	0.15	−0.11	0.02	0.45	0.19	0.13
L/t Tertiary	0.21	0.21	0.01	0.94	0.19	−0.01	0.80	0.16	−0.05	0.34	0.11	−0.10	0.21
Tertiary	0.20	0.38	0.19	0.05	0.25	0.05	0.37	0.37	0.18	0.01	0.44	0.24	0.05
Observations	6702		33			73			82			25	

Table A4. Regression results, full sample.

	M1		M2		M3		M4		M5		M6		M7		M8		M9	
Migrant generation																		
2nd gen non EU	0.01	(0.06)	0.03	(0.22)	−0.04	(−0.33)	0.01	(0.05)	0.00	(0.04)	0.01	(0.05)	−0.03	(−0.22)	0.01	(0.08)	−0.05	(−0.36)
2nd gen EU	−0.02	(−0.06)	0.04	(0.16)	−0.01	(−0.06)	−0.02	(−0.06)	−0.03	(−0.11)	−0.02	(−0.09)	−0.01	(−0.04)	−0.04	(−0.15)	−0.03	(−0.15)
1.5 gen non EU	0.01	(0.06)	0.04	(0.43)	−0.05	(−0.52)	0.00	(0.04)	−0.00	(−0.02)	0.01	(0.08)	0.00	(0.00)	0.00	(0.04)	−0.03	(−0.29)
1.5 gen EU	−0.04	(−0.20)	−0.01	(−0.05)	−0.06	(−0.28)	−0.04	(−0.20)	−0.06	(−0.26)	−0.04	(−0.19)	−0.05	(−0.22)	−0.03	(−0.13)	−0.05	(−0.22)
1st gen early non EU	0.13	(1.44)	0.12	(1.29)	0.04	(0.47)	0.13	(1.41)	0.13	(1.41)	0.13	(1.40)	0.06	(0.65)	0.08	(0.91)	−0.05	(−0.56)
1st gen early EU	−0.14	(−0.63)	−0.14	(−0.63)	−0.20	(−0.83)	−0.15	(−0.63)	−0.15	(−0.67)	−0.15	(−0.67)	−0.18	(−0.78)	−0.12	(−0.49)	−0.22	(−0.94)
1st gen late non EU	0.46**	(2.74)	0.47**	(2.81)	0.35*	(2.04)	0.45**	(2.70)	0.45**	(2.73)	0.44**	(2.60)	0.36*	(2.06)	0.46**	(2.75)	0.27	(1.49)
1st gen late EU	−0.28	(−1.33)	−0.32	(−1.35)	−0.31	(−1.50)	−0.28	(−1.34)	−0.30	(−1.45)	−0.30	(−1.40)	−0.36+	(−1.70)	−0.32	(−1.21)	−0.49+	(−1.86)
Controls																		
Age	−0.05***	(−6.45)	−0.04***	(−5.36)	−0.05***	(−6.38)	−0.05***	(−6.39)	−0.05***	(−6.47)	−0.05***	(−6.34)	−0.04***	(−5.63)	−0.05***	(−6.64)	−0.04***	(−4.45)
Age squared	0.00***	(3.44)	0.00**	(3.20)	0.00***	(3.40)	0.00***	(3.43)	0.00***	(3.46)	0.00***	(3.38)	0.00*	(2.57)	0.00*	(2.44)	0.00	(1.59)
MarStat.(RF: MR/CB)																		
Widowed	0.91***	(12.75)	0.83***	(11.78)	0.91***	(12.75)	0.91***	(12.74)	0.91***	(12.75)	0.91***	(12.77)	0.89***	(12.65)	0.82***	(11.93)	0.79***	(11.52)
Separated/divorced	0.83***	(12.26)	0.72***	(10.58)	0.83***	(12.23)	0.83***	(12.25)	0.83***	(12.18)	0.83***	(12.25)	0.80***	(11.95)	0.75***	(11.39)	0.67***	(10.05)
Never married	0.87***	(9.16)	0.70***	(7.38)	0.87***	(9.14)	0.87***	(9.19)	0.86***	(9.07)	0.85***	(8.56)	0.85***	(8.99)	0.82***	(8.84)	0.67***	(6.84)
Household child under 21	−0.08	(−1.07)	−0.03	(−0.40)	−0.08	(−1.13)	−0.08	(−1.09)	−0.08	(−1.11)	−0.07	(−1.02)	−0.08	(−1.11)	−0.02	(−0.27)	−0.01	(−0.15)
OccStat.(RF: Upr.)																		
Intermediate			0.10	(1.58)													0.12+	(1.90)
Working class			0.09	(0.97)													0.09	(0.98)
Unemployed			0.44*	(2.03)													0.35	(1.64)
Retired			0.13*	(1.99)													0.07	(1.15)
Family care or home			0.32*	(2.28)													0.25+	(1.78)
LT sick or disabled			1.49***	(9.38)													1.00***	(6.07)
Other			0.48+	(1.75)													0.41	(1.53)
Income quint (RF=1st)																		
2nd			0.08	(1.20)													0.07	(1.01)
3rd			−0.02	(−0.34)													−0.04	(−0.58)
4th			−0.00	(−0.07)													−0.01	(−0.12)
5th			−0.13*	(−2.01)													−0.11+	(−1.71)
IMD 2010 adjusted			0.00	(1.14)													−0.00	(−0.38)
Perceived discrimination					0.40**	(3.16)											0.31**	(2.64)
Extended household							0.02	(0.35)									0.02	(0.50)
Co-eth. quint (RF=1st)																		
2nd									−0.03	(−0.49)							−0.01	(−0.12)
3rd									−0.10	(−1.46)							−0.05	(−0.83)
4th									−0.05	(−0.73)							−0.04	(−0.59)
5th									−0.07	(−1.07)							−0.09	(−1.34)
Child dist. (ref: up to 1hr)																		
More than 1 hr											0.03	(0.66)					0.09+	(1.89)
Abroad											0.07	(0.55)					0.12	(1.07)

(*Continued*)

Table A4. Continued.

	M1		M2		M3		M4		M5		M6		M7		M8		M9	
No adult children											0.05	(0.86)					0.09	(1.60)
Close friend (ref: 0/1)																		
2 or 3													−0.26**	(−3.10)			−0.22**	(−2.62)
4 or 5													−0.40***	(−4.65)			−0.31***	(−3.76)
6–9													−0.55***	(−6.50)			−0.45***	(−5.55)
10+													−0.68***	(−7.99)			−0.59***	(−7.18)
Frnd. same area (ref: all)																		
more than half													0.04	(0.69)			0.10+	(1.81)
about half													0.03	(0.50)			0.10	(1.59)
less than half													0.12*	(2.01)			0.15*	(2.44)
or none?													0.27*	(2.47)			0.27**	(2.58)
SF12 PCS															−0.03***	(−15.23)	−0.02***	(−12.00)
Edu Att.(RF: tert)																		
LT Secondary															0.10	(0.59)	0.12	(0.68)
Secondary															0.15	(0.85)	0.18	(1.05)
L/t Tertiary															0.19	(1.11)	0.23	(1.35)
Tertiary															0.15	(0.88)	0.23	(1.31)
Constant	4.30***	(62.69)	4.12***	(41.34)	4.29***	(62.59)	4.29***	(60.62)	4.35***	(50.65)	4.28***	(59.68)	4.61***	(43.56)	5.56***	(27.21)	5.32***	(22.55)
Observations	8570		8570		8570		8570		8570		8570		8570		8570		8570	

Notes: t statistics in parentheses. + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$