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Challenges in researching migration status, health and health service use: an intersectional analysis of a South London community

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Objectives. This study aimed to investigate the associations between migration status and health-related outcomes and to examine whether and how the effect of migration status changes when it is disaggregated by length of residence, first language, reason for migration and combined with ethnicity.

Design. A total of 1698 adults were interviewed from 1076 randomly selected households in two South London boroughs. We described the socio-demographic and socio-economic differences between migrants and non-migrants and compared the prevalence of health-related outcomes by migration status, length of residence, first language, reason for migration and migration status within ethnic groups. Unadjusted models and models adjusted for socio-demographic and socio-economic indicators are presented.

Results. Migrants were disadvantaged in terms of socio-economic status but few differences were found between migrant and non-migrants regarding health or health service use indicators; migration status was associated with decreased hazardous alcohol use, functional limitations due to poor mental health and not being registered with a general practitioner. Important differences emerged when migration status was disaggregated by length of residence in the UK, first language, reason for migration and intersected with ethnicity. The association between migration status and functional limitations due to poor mental health was only seen in White migrants, migrants whose first language was not English and migrants who had moved to the UK for work or a better life or for asylum or political reasons. There was no association between migration status and self-rated health overall, but Black African migrants had decreased odds for reporting poor health compared to their non-migrant counterparts [odds ratio = 0.15 (0.05–0.48), $p < 0.01$].

Conclusions. Disaggregating migration status by length of residence, first language and reason for migration as well as intersecting it with ethnicity leads to better understanding of the effect migration status has on health and health service use.

Keywords: migrant; health; health service use; ethnicity; language use; UK

1. Introduction

Understanding the health of migrants is becoming progressively important as the proportion of people living outside their country of birth has continued to increase globally (United Nations 2013). Definitions of 'migrant' vary among different data sources, datasets and law (Anderson and Blinder 2013). For the purposes of this paper,

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the term migrant is used in the broadest sense and refers to all persons residing outside their country of birth in order to understand the effects of migration status on health and health service use, while considering the importance of other migration-related factors such as length of residence. Further, migrants from different countries relocate for a variety of reasons across different points in the life course; there is not simply one migrant narrative that leads to a shared experience in host countries. In the UK, the migrant population currently stands at 12% while the proportion in London is much larger at 37% (Office for National Statistics 2013). South-east London is a centre for many migrant communities in London. Brixton, a neighbourhood in the London borough of Lambeth, has been a hub for migrants from the Caribbean since 1948, and the boroughs of Southwark and Lambeth have continued to attract migrant communities, particularly large West African and South American communities (Lambeth Council 2012). More recently, the migrant population in London is increasingly diverse and globalised. Not only are people moving to London to escape persecution, to make a better life or be with family, but also wealthy people are coming here to take advantage of the benefits London provides as a global centre (May et al. 2007). This heterogeneity has implications for understanding the relationship between migration status and health. Therefore, methodologically, it is important to disaggregate migration status and investigate how migration status combines with other social statuses to affect health. Most research has addressed this by focusing on migrant sub-groups with specific trajectories, such as asylum seekers or refugees and the impact of migration on health (Jayaweera 2011), but this limits our understanding of how migration status affects health in a wider sense and how this intersects with potentially important social statuses, such as ethnicity (Kobayashi, Prus, and Lin 2008), language proficiency (Okafor et al. 2013) and socio-economic status (SES; Malmusi, Borrell, and Benach 2010).

1.1. Migration status and health

Research findings on migrant health and health service use are often contradictory (Rechel et al. 2013). In North America, many studies have observed better self-rated health (Argeseanu Cunningham, Ruben, and Venkat Narayan 2008), less limitation in daily activities (Lucas, Barr-Anderson, and Kington 2003) and fewer symptoms of psychological distress (Dey and Lucas 2006) in migrants compared to their non-migrant counterparts. In contrast, across Europe, many studies have observed poorer self-rated health for migrants compared to non-migrants (Nielsen and Krasnik 2010), whilst there is a lack of research for other health indicators (Bhopal 2012). In the UK, most research has been local and qualitative, often concentrating on asylum seekers and refugees (Jayaweera 2011). Recent national data-sets have primarily focused on ethnicity rather than migrant status (Marmot et al. 2010) and past quantitative research is based mostly on mortality studies rather than health survey data (Marmot, Shipley, and Rose 1984). Notable exceptions highlight lower rates of mental illness in migrants compared to non-migrants (Nazroo 1997), higher rates of schizophrenia in Caribbean migrants living in South-east London compared to non-migrants (Bebbington, Hurry, and Tennant 1981), while no association was found between migration status and depression in older adults in London (Livingston et al. 2001) or between migration status and poor general health in the Millennium Cohort Study, a UK longitudinal birth cohort study (Jayaweera and Quigley 2010). In addition, there are relatively few studies that look at health service use

for migrants. Quantitative research that does exist on health service use has highlighted variations across the European Union, with a recent review highlighting the need for more epidemiological data (Norredam, Nielsen, and Krasnik 2010). In the UK, recent migrants have been shown to be less likely to be registered with a general practitioner (GP; Stagg et al. 2012) and less likely to use secondary health services (Steventon and Bardsley 2011) than non-migrants.

A number of studies have indicated that recent migrants are often healthier than their native born hosts, but that migrants' health often deteriorates with length of stay in the host country (Hill et al. 2012). Acculturation [changes that take place among migrants due to contact with culturally dissimilar groups and influences, such as the uptake of risky health behaviours (Hawkins et al. 2008)] has been posited as an explanatory process for this deterioration (Hill et al. 2012). Linear deterioration of self-rated health in migrants has been observed in a UK sample but there were no associations between length of residence and health behaviours (Jayaweera and Quigley 2010). However, a linear deterioration in health is not always observed and the effects vary when migration status and ethnicity are intersected (Dey and Lucas 2006). Language proficiency is also often used as a proxy for acculturation and limited English proficiency has been found to be associated with both lower rates of mental illness in the UK (Nazroo 1997) and poor self-rated health in African migrants in the USA (Okafor et al. 2013). Indeed, there is increasing criticism of acculturation as an explanation for health inequalities in migrants and a shift away from individual level concepts to more structural explanations, such as SES and social construction of multiple identities. These identities can be highly contradictory leading to uneven processes of advantage and disadvantage or exclusion and inclusion that vary across national borders (Anthias 2008).

1.2. Intersections with ethnicity and SES

Previous work treating migrants as a homogenous group has been criticised and it has been proposed that to further understand the social determinants of migrant health, an intersectional approach is needed (Viruell-Fuentes, Miranda, and Abdulrahim 2012). Intersectionality is a methodology of studying 'the relationships among multiple dimensions and modalities of social relationships and subject formations' (McCall 2005). It does not treat social categories as discrete and non-interacting but as categories that operate together to produce inequality. Ethnicity and SES are two social statuses that are likely to be important in this regard (Bhugra 2004; Nazroo et al. 2007).

Although ethnic inequalities in health are well documented (Hatch et al. 2011; Marmot et al. 2010; Sproston, Mindell, and Becker 2006), there are relatively few studies that investigate the effect of migration status on health within ethnic groups. Research in Canada found that foreign-born South Asian and Chinese groups were more likely to have worse self-rated health and increased odds of functional limitations than their Canadian-born counterparts whereas the opposite was true in white French and Black migrants (Kobayashi et al. 2008). In the USA, Black Caribbean migrants had lower rates of psychiatric disorder compared to their non-migrant counterparts (Williams et al. 2007). In the UK, there is a lack of data on how migration status affects health across different ethnic groups. However, other structural factors, such as SES, have been shown to affect the relationship between ethnicity and health (Nazroo et al. 2007) and may contribute to the relationship between ethnicity, migration status and health.

Associations between migration status, ethnicity and health cannot be explained without taking account of SES as it structures differential access to power, privilege and resources, which are fundamental for health (Link and Phelan 1995). Research has suggested that higher rates of anxiety in Turkish and Moroccan migrants compared to non-migrants in the Netherlands are largely explained by SES (Levecque, Lodewyckx, and Vranken 2007) and that migrants living in economic deprivation in Spain have poorer self-rated health than non-migrants (Malmusi et al. 2010). Taking into account reasons for migration may also be important in understanding these associations. Improving SES through employment or education is a dominant rational for migration (Blinder 2013), and unfulfilled expectations in realising these goals may be linked to depressive symptoms (Vega, Kolody, and Valle 1987). Despite this, there is scarce quantitative research exploring the association between reason for migration and health and health service use.

In response to calls in the literature for a more structural and intersectional approach to understanding migrant health, the objectives of this study are (1) to describe the socio-demographic and socio-economic differences between migrants and non-migrants as broad groupings and by ethnicity, as well as within migrant groups by length of residence in the UK; (2) to investigate the associations between migration status and health-related outcomes, including health behaviours, functional limitations, physical and mental health status and health service use; and (3) to examine whether and how the effect of migration status changes when it is disaggregated by length of residence, first language, reason for migration and combined with ethnicity.

2. Methods

2.1. Study design and participants

The South East London Community Health (SELCoH) study is a community survey of psychiatric and physical morbidity of 1698 individuals, from 1075 randomly selected households from two boroughs in South-east London, Lambeth and Southwark (Hatch et al. 2011). Data were collected from 2008 to 2010. Households were identified through random sampling using the Small User Postcode Address File. All individuals who were 16 years and over living in the selected households were invited to participate. Participants completed a computer-assisted survey with trained interviewers; interpreters were available where necessary. Professional interpreters, booked through the South London and Maudsley (SLaM) National Health Service (NHS) trust, were used in interviews with 34 non-English speaking adults. The languages were Spanish, Portuguese, Polish, Turkish, French, Italian, Pashto, Twi, Bengali, Gujarati, Japanese, Russian, Ukrainian and Urdu.

The household participation rate was 51.9% with 71.9% participation of eligible individuals within households. The sample was similar to the most recent UK Census information in 2011 with regards to socio-demographic and socio-economic indicators for the catchment area under study (Office for National Statistics 2011). The boroughs are ethnically diverse, with large Caribbean, West African and South American communities (Lambeth Council 2012). The study received approval from the King's College London research ethics committee, reference CREC/07/08-152.

2.2. Measures

2.2.1. Health behaviours

Hazardous alcohol use was measured with the Alcohol Use Disorders Identification Test (AUDIT; Babor et al. 1992). The measure contains 10 questions related to consumption, dependence and problems related to alcohol abuse. Each item is scored from 0 to 4, with a total score ranging from 0 to 40. An AUDIT score of 8 or more has been used to define hazardous alcohol use. Participants were classified as current smokers if they answered that they were currently smoking. Participants reported illicit drug use in the past month for the following drugs: cannabis, amphetamines, cocaine, crack, ecstasy, lysergic acid diethylamide (LSD), tranquilliser and heroin. Any drug use in the past month referred to use of at least one drug in the past month.

2.2.2. Physical and mental health status

Self-rated general health was indicated by a single item in the 12-item Short Form (SF-12) questionnaire (Ware Jr, Kosinski, and Keller 1996). Participants rated their overall health as poor, fair, good, very good or excellent and responses were re-categorised into a binary variable (poor or fair health versus good, very good or excellent health). Participants were classified as having a long-standing illness if they indicated that they had a long-standing illness, disability or infirmity that troubled them over a period of time.

Common mental disorder (CMD) was assessed with the Revised Clinical Interview Schedule (CIS-R), a structured interview that enquires about the following symptoms: fatigue, sleep problems, irritability, worry, depression, depressive ideas, anxiety, obsessions, memory and concentration, somatic symptoms, compulsions, phobias, physical health worries and panic. A total CIS-R score of 12 or more is commonly used to indicate the presence of CMD (Lewis et al. 1992).

2.2.3 Functional limitations

Three individual items from the SF-12 were also used to indicate functioning. Functional limitations due to physical health represented participants who indicated that their physical health limited their work or other activities in the last four weeks. Functional limitations due to emotional problems represented those participants who indicated that they had accomplished less due to their emotional problems in the last four weeks. Finally, participants indicated how much of the time their physical or emotional problems had interfered with their social activities. The responses were categorised as none of the time; a little/some/a bit of the time; and most or all of the time.

2.2.4 Health service use

Participants were asked if they were currently registered with a GP and if they had seen a GP, counsellor or mental health specialist regarding an emotional problem in the last 12 months. Participants were also asked if they had used any hospital services (accident and emergency and other outpatient departments) in the last 12 months.

2.2.5 Socio-demographic indicators

The socio-demographic indicators used in the analysis include gender, age and ethnicity. Self-reported ethnicity indicated identification with one of the following groups: White, Black African, Black Caribbean, Black Other, Indian, Pakistani, Bangladeshi, Chinese or Other. Indian, Pakistani, Bangladeshi, Chinese, Black Other and Other were collapsed into an 'Other ethnic group' category due to small cell sizes. Migrant status was captured as born in the UK or not; length of residence in the UK (0–4 years, 5–10 years and more than 10 years) and reason for migration (education, work/better life, to be with family or for relationship, asylum or political reasons). Participants were also asked whether or not English is their first language.

2.2.6 Socio-economic indicators

The socio-economic indicators in the analysis were educational attainment, employment status and household income. Educational attainment was classified into the following groups: no qualifications, up to GCSE level or equivalent, up to advanced level or equivalent (high school equivalent), higher (university) degree or above. Employment status was classified into the following four categories: employed (full time or part time), unemployed, student and other (retired, temporary sick, permanent sick/disabled or looking after the home with children). Participants reported annual household income before deductions for income tax and National Insurance based on the following five categories: (1) £0–5475, (2) £5476–£12,097, (3) £12,098–£20,753, (4) £20,754–£31,494 and (5) £31,495 or more.

2.3. Statistical analyses

Analyses were conducted in STATA 11 (StataCorp 2009). We used survey commands (svy) for estimates of prevalence and associations where appropriate to generate robust standard errors. This analysis accounted for clustering by household, and data were weighted for non-response bias within households. Frequencies are reported unweighted. To describe socio-demographic and socio-economic characteristics of migrants and non-migrants, frequency and prevalence estimates were reported (mean and standard error were used for reporting age) for the sample stratified by (1) migration status and length of residence in the UK and (2) by migration status within ethnic groups. To identify associations between migration status and outcome measures, prevalence estimates, odds ratios (ORs) from logistic regression models and relative risk ratios (RRRs) from multinomial logistic regression models with 95% confidence intervals were calculated.

Models were tested to investigate the effect of (1) migration status, (2) length of residence in the UK, (3) first language, (4) reason for migration and (5) migration status within each ethnic group category (comparing migrants to non-migrants within each ethnic group) for all outcomes. Two models are presented, unadjusted and fully adjusted for age (as a continuous variable), gender, ethnicity, educational attainment, work status, household income and a cumulative score of all three health behaviours (detailed fully adjusted models are available in the Online appendix). Due to smaller group sizes in models combining migration status and ethnicity, the following potential confounders were re-coded into dichotomous variables in the fully adjusted models: educational

attainment (1 = advanced level or above), employment status (1 = working) and household income (1 = £31,395 and above). Analysis is based on 1669 participants who answered a question on country of birth, 659 (39.3%) of whom were born outside the UK. This is similar to the most recent Office for National Statistics (ONS) information (39.1%) for Southeast London (Office for National Statistics 2013).

3. Results

3.1. Migrant and non-migrant characteristics

Table 1 describes the prevalence estimates and means for migration status indicators by socio-demographic and socio-economic characteristics. Migrants tended to report higher educational attainment but lower household income levels than non-migrants. Within the migrant sample, 56.9% of the population had been living in the UK for more than 10 years. Notably, the distribution of ethnic groups and first language changed over time. A greater proportion of newer migrants (residing in the UK for less than 5 years) were White while a greater proportion of those residing in the UK for 5–10 years were Black African. The most recent migrant group had a lower proportion of migrants whose first language was English compared to migrants who had resided in the UK longer. In terms of socio-economic indicators, migrants who had been residing in the UK for more than 10 years had lower educational attainment than more recent migrants. Education was the most common reason for migration among the most recent migrants, whereas migrating to be with family was more common among migrants who have been residing in the UK longer.

3.2. Migrant and non-migrant characteristics by ethnicity

Table 2 shows the characteristics of migrants and non-migrants by ethnic group. Across all ethnic groups, migrants' mean age was higher than non-migrants with the exception of the White group. Within the Other ethnic group (n = 268), 13.4% identified as Indian, 12.6% identified as Black Other, 7.6% identified as Pakistani, 8.4% identified as Chinese, 3.1% identified as Bangladeshi and 55.0% identified as Other (not shown). Of the 153 participants who identified as Other ethnicity, 41.7% were born in the UK, 18.9% were born in Asian countries, 18.2% were born across the Americas, 13.4% were born in African countries and 7.9% were born in Europe (not shown). There were differences in socio-economic indicators within the different ethnic groups. Migrants and non-migrants in the White ethnic group were generally similar; however, migrants tended to have higher educational attainment. Migrants within the Black Caribbean group were more disadvantaged than non-migrants for all indicators. Migrants in the Black African and Other groups had similar levels of educational attainment as their non-migrant counterparts, yet both groups of migrants also had lower proportions in the higher household income categories.

3.3. Health behaviours

As indicated in Table 3, in the unadjusted model, migrants had decreased odds of hazardous alcohol use, current smoking and illicit drug use in the past month compared to non-migrants. However, the associations with current smoking and illicit drug use were

Table 1. Comparison of the socio-demographic and socio-economic indicators of migrants and non-migrants.

| | Migration status and migrant length of residence (years) | | | | | | |
| | Total sample | | | Migrant sample | | | |
	Non-migrant (n = 1010) %	Migrant (all) (n = 659) %	p	Migrant (<5) (n = 137) %	Migrant (5–10) (n = 178) %	Migrant (>10) (n = 337) %	p
Total	60.7	39.3		17.8	25.3	56.9	
Gender			0.175				0.016
Female	65.7	68.5		64.2	76.4	66.6	
Male	34.3	31.5		35.8	23.6	33.4	
Mean age (SE)	43.7 (0.8)	43.1 (0.8)		28.8 (0.8)	33.7 (1.0)	51.69 (1.0)	
Ethnic group			<0.001				<0.001
White	79.3	37.9		56.0	32.4	34.2	
Black Caribbean	6.9	11.9		1.1	9.5	16.5	
Black African	4.6	26.6		16.0	35.5	26.4	
Other	9.3	23.6		26.9	22.6	22.9	
Education			0.005				<0.001
No qualifications	16.5	17.1		3.9	7.9	25.4	
Up to GCSE level	22.0	16.9		10.4	16.2	19.1	
Advanced level	20.8	28.7		31.9	33.3	25.5	
Higher degree or above	40.7	37.3		53.8	42.6	30.0	
Employment status			0.289				<0.001
Employed	51.8	50.6		53.9	61.7	44.3	
Unemployed	8.8	10.3		8.6	13.3	9.6	
Student	13.6	10.8		30.7	11.3	4.3	
Other	25.8	28.4		6.8	13.7	41.8	
Yearly household income			<0.001				0.158
£0–£5475	9.8	11.9		8.6	14.1	11.1	
£5476–£12,097	14.7	19.9		11.3	20.9	22.3	
£12,098–£20,753	12.2	19.6		25.3	12.9	20.6	
£20,754–£31,494	10.5	13.8		14.3	14.2	13.4	
£31,495 or more	52.8	35.2		40.5	37.9	32.7	
Reason for migration							<0.001
Education	–	25.4		42.3	30.8	17.5	

Table 1 (*Continued*)

| | Migration status and migrant length of residence (years) | | | | | | |
| | Total sample | | | Migrant sample | | | |
	Non-migrant ($n = 1010$) %	Migrant (all) ($n = 659$) %	p	Migrant (<5) ($n = 137$) %	Migrant (5–10) ($n = 178$) %	Migrant (>10) ($n = 337$) %	p
Work/better life	–	27.7		34.2	25.5	26.7	
Family/relationship	–	39.1		21.8	32.1	47.7	
Asylum/political	–	7.8		1.8	11.6	8.1	
English as first language							0.007
Yes	–	44.1		30.9	41.6	48.5	
No	–	55.9		69.1	58.4	51.5	

Note: Weighted percentages account for survey design. p values calculated using Pearson's χ^2 test.

Table 2. Comparison of socio-demographic and socio-economic indicators of migrants and non-migrants within ethnic groups.

	White n = 1051			Black Caribbean n = 143			Black African n = 234			Other n = 268		
	NM % n = 796	M % n = 255	p	NM % n = 79	M % n = 64	p	NM % n = 55	M % n = 179	p	NM% n = 107	M % n = 161	p
Total	76.3	23.7		47.2	52.8		21.1	78.9		37.7	62.3	
Gender			0.221			0.109			0.849			0.836
Female	65.6	69.6		65.4	76.5		66.6	67.4		65.7	64.1	
Male	34.4	30.4		34.6	23.5		33.4	32.6		34.3	35.9	
Mean Age (SE)	47.3 (0.9)	41.3 (1.3)		30.9 (1.2)	55.5 (2.5)		26.2 (1.7)	41.1 (1.2)		31.4 (1.2)	42.1 (1.7)	
Educational attainment			0.001			<0.001			0.760			0.540
No qualifications	19.0	14.5		3.5	43.8		7.4	12.0		9.1	13.4	
Up to GCSE level	19.4	8.3		39.7	29.9		21.1	19.0		29.5	22.1	
Advanced level	17.6	24.9		40.6	23.6		35.6	38.5		26.3	26.4	
Higher degree or above	43.9	52.2		16.2	2.7		36.0	30.5		35.1	38.1	
Employment status			0.058			<0.001			<0.001			0.022
Employed	52.5	58.5		53.6	33.9		41.5	52.3		50.6	44.0	
Unemployed	8.1	11.1		14.3	7.3		4.9	12.7		12.3	7.6	
Student	9.5	9.7		26.9	2.7		51.3	12.7		20.7	14.5	
Other	29.9	20.7		5.2	56.0		2.4	22.3		16.4	33.9	
Yearly household income			0.112			0.008			0.033			0.056
£0–£5475	8.8	7.5		14.2	16.2		2.1	15.9		16.4	11.3	
£5476–£12,097	15.1	11.4		13.5	37.0		15.3	20.7		12.4	26.0	
£12,098–£20,753	10.9	17.8		25.6	21.5		13.0	19.9		13.5	21.3	
£20,754–£31,494	9.4	11.5		18.6	18.4		17.5	18.1		12.0	10.9	
£31,495 or more	55.6	51.7		28.2	7.0		52.1	25.4		45.7	30.5	
Reason for Migration												
Education	–	28.5		–	8.8		–	23.3		–	31.2	
Work/better life	–	41.0		–	25.3		–	20.4		–	16.5	
Family/relationship	–	28.1		–	65.9		–	42.3		–	39.2	
Asylum/political	–	2.5		–	0		–	14.0		–	13.0	
First language												
English		44.0			98.7			39.4			22.2	
Other		56.0			1.3			60.6			77.8	

Note: Weighted percentages account for survey design. p values calculated using Pearson's χ^2 test.
M, migrant; NM, non-migrant.

Table 3. Indicators of health behaviours by migration status, length of residence in the UK, first language, reason for migration and by migration status within ethnic groups.

	Heath behaviours		
	Hazardous alcohol use%	Current smoking%	Any illicit drug use in last month%
	Prevalence and odds ratios (95% CI)		
Non-migrant (n = 1010)	21.5	26.5	13.3
Migrant (n = 659)	11.5	19.3	7.5
Unadjusted OR migrant	0.48 (0.35–0.64)***	0.66 (0.51–0.86)**	0.53 (0.37–0.77)**
Adjusted OR migrant	0.69 (0.48–0.98)*	0.83 (0.60–1.15)	0.74 (0.47–1.14)
Length of residence in UK (years)			
Migrant >10 years (n = 337)	11.6	18.2	6.4
Migrant 5–10 years (n = 178)	7.3	14.6	4.1
Migrant <5 years (n = 137)	15.8	26.0	14.9
Unadjusted OR			
Non-migrant	1	1	1
Migrant >10 years	0.48 (0.33–0.69)***	0.62 (0.44–0.86)**	0.45 (0.27–0.75)**
Migrant 5–10 years	0.29 (0.16–0.53)***	0.48 (0.30–0.76)**	0.28 (0.13–0.59)**
Migrant <5 years	0.69 (0.39–1.21)	0.98 (0.63–1.52)	1.15 (0.64–2.04)
Adjusted OR			
Non-migrant	1	1	1
Migrant >10 years	1.00 (0.65–1.55)	0.88 (0.59–1.31)	0.85 (0.48–1.54)
Migrant 5–10 years	0.36 (0.18–0.70)**	0.54 (0.31—0.93)*	0.34 (0.15–0.79)*
Migrant <5 years	0.50 (0.27–0.94)*	0.87 (0.49–1.54)	0.93 (0.47–1.84)
First language			
Migrant-English (n = 310)	16.5	18.8	10.3
Migrant-Other (n = 378)	7.2	19.6	5.3
Unadjusted OR			
Non-migrant	1	1	1
Migrant-English	0.72 (0.51–1.03)	0.64 (0.46–0.90)*	0.75 (0.48–1.16)
Migrant-Other	0.28 (0.19–0.43)***	0.68 (0.49–0.93)*	0.37 (0.21–0.63)***
Adjusted OR			
Non-migrant	1	1	1

Table 3 (*Continued*)

	Heath behaviours		
	Hazardous alcohol use%	Current smoking%	Any illicit drug use in last month%
	Prevalence and odds ratios (95% CI)		
Migrant-English	1.16 (0.76–1.76)	0.76 (0.51–1.14)	1.02 (0.62–1.70)
Migrant-Other	0.34 (0.21–0.55)***	0.89 (0.59–1.32)	0.46 (0.24–0.89)*
Reason for migration			
Education (*n* = 172)	11.7	18.5	8.9
Work/better life (*n* = 181)	16.9	21.6	7.3
Family/relationship (*n* = 229)	7.6	17.0	8.2
Asylum/political (*n* = 51)	4.3	18.7	0
Unadjusted OR			
Non-migrant	1	1	1
Migrant-education	0.48 (0.29–0.81)**	0.63 (0.42–0.95)*	0.64 (0.35–1.14)
Migrant-work/better life	0.74 (0.48–1.14)	0.77 (0.51–1.15)	0.52 (0.30–0.90)*
Migrant-family/relationship	0.30 (0.19–0.48)***	0.57 (0.38–0.85)**	0.58 (0.33–1.01)
Migrant-asylum/political reasons	0.16 (0.04–0.69)*	0.64 (0.31–1.34)	–
Adjusted OR			
Non-migrant	1	1	1
Migrant-education	0.48 (0.27–0.84)*	0.73 (0.45–1.19)	0.75 (0.38–1.48)
Migrant-work/better life	0.86 (0.51–1.45)	0.92 (0.58–1.48)	0.69 (0.38–1.25)
Migrant-family/relationship	0.58 (0.34–0.98)*	0.72 (0.44–1.17)	0.91 (0.47–1.77)
Migrant-asylum/political	0.37 (0.08–1.77)	0.72 (0.25–2.06)	–
Ethnic group and migration status			
White non-migrant (*n* = 796)	24.2	26.7	12.5
White migrant (*n* = 255)	18.9	24.2	10.2
Black Caribbean non-migrant (*n* = 79)	6.5	28.3	24.0
Black Caribbean migrant (*n* = 64)	2.9	20.7	9.5
Black African non-migrant (*n* = 55)	2.2	5.4	6.7
Black African migrant (*n* = 179)	6.3	8.4	1.8
Other non-migrant (*n* = 107)	19.7	32.8	16.0
Other migrant (*n* = 161)	9.9	22.5	8.7
Unadjusted OR[a]			
Non-migrant	1	1	1

Table 3 (*Continued*)

	Heath behaviours		
	Hazardous alcohol use%	Current smoking%	Any illicit drug use in last month%
	Prevalence and odds ratios (95% CI)		
White migrant	0.73 (0.51–1.05)	0.87 (0.61–1.25)	0.80 (0.48–1.32)
Black Caribbean migrant	0.43 (0.08–2.33)	0.66 (0.29–1.50)	0.33 (0.13–0.87)*
Black African migrant	2.93 (0.40–21.35)	1.61 (0.42–6.13)	0.25 (0.05–1.23)
Other migrant	0.45 (0.21–0.95)*	0.60 (0.33–1.08)	0.50 (0.22–1.11)
Adjusted OR[a,b]			
Non-migrant	1	1	1
White migrant	0.63 (0.41–0.96)*	0.85 (0.56–1.29)	0.74 (0.41–1.31)
Black Caribbean migrant	0.11 (0.03–5.15)	0.82 (0.26–2.58)	0.26 (0.05–1.21)
Black African migrant	3.05 (0.27–34.71)	1.33 (0.20–9.03)	1.30 (0.02–82.92)
Other migrant	0.49 (0.20–1.21)	0.52 (0.24–1.13)	0.81 (0.29–2.25)

[a]All ORs are within ethnic group comparisons to non-migrants; [b]ethnicity not adjusted for.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
Note: Weighted percentages account for survey design. Adjusted ORs adjust for age, gender, ethnicity, educational attainment, household income and work status.

fully attenuated in adjusted models. In comparison to non-migrants, migrants who had been residing in the UK for more than five years also had decreased odds of reporting all three risky health behaviours in unadjusted models. In adjusted models, these associations were attenuated in migrants who had been residing in the UK for more than 10 years. Although there were no associations identified between migrants who had been residing in the UK for less than five years and any of the risky health behaviours in unadjusted models, there was an association with hazardous alcohol use after adjusting for potential confounders.

In unadjusted models, migrants whose first language was not English had decreased odds of hazardous alcohol use, current smoking and illicit drug use in the past month while migrants whose first language was English only had decreased odds of current smoking compared to non-migrants. The association with current smoking was attenuated after controlling for potential confounders. In unadjusted models, those who migrated for education, to be with family or for asylum or political reasons, all had decreased odds of hazardous alcohol use compared to non-migrants. These associations were attenuated in those who migrated for political reasons in adjusted models. Those who migrated for education or to be with family also had decreased odds of current smoking compared to non-migrants. However, both associations were attenuated after adjusting for potential confounders. Those who migrated for work had decreased odds of illicit drug use compared to non-migrants in the unadjusted model but this association was attenuated in the fully adjusted model.

Compared to their non-migrant counterparts within the same ethnic group, migrants in the Other ethnic group had decreased odds of hazardous alcohol use and Black Caribbean migrants had decreased odds of illicit drug use in the past month. However, both associations were attenuated in the fully adjusted model. Although there was no association between migration status and hazardous alcohol use in the White ethnic group in the unadjusted model there was an association in the fully adjusted model after adjusting for potential confounders.

3.4. Physical and mental health status

As indicated in Table 4, no associations between migration status and mental or physical health status were identified. However, migrants who had been residing in the UK for more than 10 years had increased odds of rating their health as fair or poor and indicating the presence of a long-standing illness compared to non-migrants. These associations were attenuated after controlling for potential confounders. In comparison, migrants who had resided in the UK for 10 years or less had decreased odds for these two health outcomes compared to non-migrants. Again, these associations were fully attenuated after adjusting for confounders.

In unadjusted models, those who migrated for education had decreased odds of both poor or fair self-rated health and reporting a long-standing illness compared to non-migrants. These associations were attenuated after adjusting for potential confounders. In the fully adjusted model, those who migrated for political reasons had increased odds of reporting CMD compared to non-migrants. In comparison to non-migrants within their ethnic group, Black African migrants and migrants from the Other ethnic group had decreased odds of rating their health as fair or poor in the adjusted model. Migrants from the Other ethnic group also had decreased odds of reporting the presence of a long-

Table 4. Indicators of physical and mental health symptoms by migration status, length of residence in the UK, first language, reason for migration and by migration status within ethnic groups.

	Physical and mental health symptoms		
	Self-rated health (fair or poor)	Long standing illness	CMD
	Prevalence and ORs (95% CI)		
Non-migrant (*n* = 1010)	19.8	45.5	24.9
Migrant (*n* = 659)	19.0	44.0	23.5
Unadjusted OR migrant	0.95 (0.72–1.25)	0.94 (0.76–1.17)	0.92 (0.71–1.19)
Adjusted OR migrant	0.78 (0.53–1.14)	0.99 (0.74–1.33)	1.02 (0.74–1.41)
Length of residence in UK (years)			
Migrant >10 years (*n* = 337)	26.4	58.3	27.0
Migrant 5–10 years (*n* = 178)	10.4	30.6	20.7
Migrant <5 years (*n* = 137)	9.0	18.1	16.5
Unadjusted OR			
Non-migrant	1	1	1
Migrant >10 years	1.46 (1.06–2.00)*	1.67 (1.28–2.19)**	1.12 (0.82–1.51)
Migrant 5–10 years	0.47 (0.21–0.76)*	0.53 (0.36–0.77)**	0.79 (0.50–1.23)
Migrant <5 years	0.40 (0.21–0.76)**	0.27 (0.17–0.43)***	0.60 (0.35–1.01)
Adjusted OR			
Non-migrant	1	1	1
Migrant >10 years	0.96 (0.61–1.51)	1.19 (0.83–1.70)	1.24 (0.84–1.82)
Migrant 5–10 years	0.61 (0.32–1.16)	0.95 (0.60–1.50)	1.01 (0.61–1.68)
Migrant <5 years	0.57 (0.27–1.24)	0.60 (0.34–1.07)	0.64 (0.35–1.16)
First language			
Migrant-English (*n* = 310)	17.1	4.6	24.2
Migrant-Other (*n* = 378)	19.3	4.2	22.2
Unadjusted OR			
Non-migrant	1	1	1
Migrant-English	0.84 (0.58–1.22)	1.03 (0.78–1.36)	0.96 (0.70–1.33)
Migrant-Other	0.97 (0.69–1.36)	0.88 (0.68–1.14)	0.86 (0.63–1.16)
Adjusted OR			
Non-migrant	1	1	1
Migrant-English	0.63 (0.40–1.00)	1.00 (0.70–1.42)	1.00 (0.68–1.45)
Migrant-Other	0.91 (0.57–1.44)	0.90 (0.64–1.27)	1.03 (0.69–1.54)
Reason for migration			
Education (*n* = 172)	11.9	34.8	21.3
Work/better life (*n* = 181)	17.8	45.4	21.9
Family/relationship (*n* = 229)	23.9	47.8	23.0
Asylum/political (*n* = 51)	19.6	47.4	33.9
Unadjusted OR			
Non-migrant	1	1	1
Migrant-education	0.55 (0.32–0.94)*	0.64 (0.44–0.92)*	0.82 (0.53–1.26)
Migrant-work/better life	0.89 (0.56–1.41)	1.00 (0.70–1.42)	0.85 (0.55–1.29)
Migrant-family/relationship	1.27 (0.88–1.84)	1.10 (0.81–1.49)	0.90 (0.63–1.29)
Migrant-asylum/political	0.99 (0.43–2.27)	1.08 (0.60–1.93)	1.55 (0.83–2.89)
Adjusted OR			
Non-migrant	1	1	1
Migrant-education	0.54 (0.27–1.06)	0.94 (0.62–1.41)	0.94 (0.56–1.57)
Migrant-work/better life	0.86 (0.50–1.49)	1.12 (0.73–1.73)	1.07 (0.67–1.70)
Migrant-family/relationship	0.93 (0.55–1.55)	0.96 (0.63–1.47)	0.90 (0.58–1.40)
Migrant-asylum/political	0.71 (0.27–1.84)	0.84 (0.40–1.73)	2.47 (1.09–5.62)*

Table 4 (*Continued*)

	Physical and mental health symptoms		
	Self-rated health (fair or poor)	Long standing illness	CMD
	Prevalence and ORs (95% CI)		
Ethnic group and migration status			
White non-migrant (*n* = 796)	18.0	48.7	24.2
White migrant (*n* = 255)	16.3	42.4	25.5
Black Caribbean non-migrant (*n* = 79)	24.9	28.5	27.7
Black Caribbean migrant (*n* = 64)	34.5	60.0	33.9
Black African non-migrant (*n* = 55)	20.3	19.8	20.9
Black African migrant (*n* = 179)	13.3	38.9	19.4
Other non-migrant (*n* = 107)	26.0	44.3	30.3
Other migrant (*n* = 161)	21.8	44.3	19.5
Unadjusted OR[a]			
Non-migrant	1	1	1
White migrant	0.86 (0.56–1.31)	0.78 (0.57–1.06)	1.07 (0.75–1.53)
Black Caribbean migrant	1.59 (0.77–3.28)	3.76 (1.89–7.49)***	1.34 (0.62–2.89)
Black African migrant	0.60 (0.26–1.38)	2.58 (1.21–5.48)*	0.91 (0.41–2.01)
Other migrant	0.79 (0.42–1.51)	1.00 (0.57–1.75)	0.56 (0.30–1.03)
Adjusted OR[a,b]			
Non-migrant	1	1	1
White migrant	1.07 (0.65–1.75)	1.11 (0.77–1.60)	1.14 (0.77–1.71)
Black Caribbean migrant	1.23 (0.34–4.37)	0.71 (0.21–2.35)	1.26 (0.37–4.27)
Black African migrant	0.15 (0.05–0.48)**	0.81 (0.27–2.38)	0.86 (0.26–2.83)
Other migrant	0.25 (0.11–0.55)**	0.36 (0.16–0.83)*	0.48 (0.22–1.03)

[a]All ORs are within ethnic group comparisons to non-migrants; [b]ethnicity not adjusted for.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
Note: Weighted percentages account for survey design. Adjusted ORs adjust for age, gender, ethnicity, educational attainment, household income, work status and health behaviours.

standing illness in the adjusted model. Black African and Black Caribbean migrants had increased odds of reporting the presence of a long-standing illness compared to their non-migrant counterparts in the unadjusted model, but these were attenuated after adjusting for confounders.

3.5. Functional limitations

As indicated in Table 5, migrants had increased odds of functional limitations due to poor mental health compared to non-migrants in the unadjusted model. This association persisted in the adjusted model. By length of residence, associations were found for functional limitation due to poor physical health, poor mental health and limitations for social functioning. Only the association for functional limitations due to poor mental health remained in adjusted models. After adjusting for potential confounders, migrants in each length of residence grouping were found to have increased odds of functional

Table 5. Indicators of everyday functioning by migration status, length of residence in the UK, first language, reason for migration and by migration status within ethnic groups.

	Everyday functioning			
	Limited by physical health problems[a]	Accomplished less due to emotional problems[a]	Limitations for social functioning[b]	
			Some of the time	Most or all of the time
	Prevalence and odds ratios (95% CI)		Prevalence and relative risk ratios (95% CI)	
Non-migrant (n = 1010)	21.6	16.8	27.8	7.3
Migrant (n = 659)	22.5	21.9	25.0	9.3
Unadjusted OR migrant	1.06 (0.80–1.39)	1.39 (1.06–1.81)*	0.89 (0.69–1.14)	1.24 (0.83–1.88)
Adjusted OR migrant	1.15 (0.81–1.64)	1.70 (1.20–2.40)**	0.95 (0.71–1.28)	1.09 (0.60–2.00)
Length of residence in UK (years)				
Migrant >10 years (n = 337)	29.2	22.3	23.1	12.2
Migrant 5–10 years (n = 178)	14.3	20.8	27.6	8.0
Migrant <5 years (n = 137)	13.4	23.6	28.0	1.6
Unadjusted OR and RRR				
Non-migrant	1	1	1	1
Migrant >10 years	1.50 (1.09–2.07)*	1.42 (1.02–1.97)*	0.83 (0.60–1.15)	1.67 (1.05–2.64)*
Migrant 5–10 years	0.61 (0.38–0.99)*	1.30 (0.85–1.98)	1.00 (0.68–1.48)	1.10 (0.57–2.12)
Migrant <5 years	0.56 (0.31–1.02)	1.53 (0.97–2.41)	0.93 (0.60–1.45)	0.21 (0.06–0.67)**
Adjusted OR and RRR				
Non-migrant	1	1	1	1
Migrant >10 years	1.24 (0.82–1.89)	1.62 (1.05–2.51)*	0.98 (0.67–1.42)	1.15 (0.58–2.29)
Migrant 5–10 years	1.11 (0.64–1.93)	2.05 (1.25–3.36)**	1.05 (0.66–1.67)	1.67 (0.69–4.04)
Migrant <5 years	1.00 (0.52–1.91)	1.84 (1.07–3.16)*	0.82 (0.50–1.34)	0.24 (0.05–1.06)
First language				
Migrant-English (n = 310)	20.7	19.3	21.8	9.9
Migrant-Other (n = 378)	23.4	22.8	27.0	8.4
Unadjusted OR and RRR				

Table 5 (*Continued*)

	Everyday functioning			
	Limited by physical health problems[a]	Accomplished less due to emotional problems[a]	Limitations for social functioning[b]	
			Some of the time	Most or all of the time
	Prevalence and odds ratios (95% CI)		Prevalence and relative risk ratios (95% CI)	
Non-migrant	1	1	1	1
Migrant-English	0.95 (0.67–1.36)	1.18 (0.83–1.69)	0.74 (0.53–1.04)	1.29 (0.76–2.18)
Migrant-Other	1.11 (0.80–1.54)	1.46 (1.07–2.00)*	0.98 (0.73–1.31)	1.16 (0.71–1.87)
Adjusted OR and RRR				
Non-migrant	1	1	1	1
Migrant-English	0.99 (0.64–1.54)	1.39 (0.91–2.12)	0.87 (0.60–1.27)	0.91 (0.46–1.79)
Migrant-Other	1.22 (0.80–1.84)	1.85 (1.22–2.79)**	0.99 (0.69–1.42)	1.18 (0.56–2.48)
Reason for migration				
Education (*n* = 172)	20.1	21.0	39.1	5.5
Work/better life (*n* = 181)	20.8	22.7	19.7	6.0
Family/relationship (*n* = 229)	23.6	22.0	21.8	11.3
Asylum/political (*n* = 51)	24.2	28.5	24.1	13.0
Unadjusted OR				
Non-migrant	1	1	1	1
Migrant-education	0.91 (0.58–1.44)	1.31 (0.86–2.02)	1.65 (1.14–2.38)**	0.88 (0.40–1.94)
Migrant-work/better life	0.96 (0.61–1.49)	1.45 (0.94–2.23)	0.62 (0.41–0.94)*	0.72 (0.32–0.94)
Migrant-family/relationship	1.12 (0.76–1.65)	1.40 (0.96–2.04)	0.76 (0.52–1.11)	1.50 (0.87–2.57)
Migrant-asylum/political	1.16 (0.53–2.54)	1.97 (0.97–3.98)	0.89 (0.42–1.92)	1.83 (0.73–4.58)
Adjusted OR				
Non-migrant	1	1	1	1
Migrant-education	1.19 (0.70–2.05)	1.59 (0.95–2.65)	1.81 (1.18–2.77)**	0.63 (0.22–1.81)
Migrant-work/better life	1.17 (0.72–1.90)	2.07 (1.28–3.34)**	0.69 (0.43–1.10)	0.86 (0.37–1.99)
Migrant-family/relationship	0.99 (0.59–1.66)	1.60 (0.97–2.62)	0.83 (0.53–1.29)	1.00 (0.42–2.37)

Table 5 (*Continued*)

	Everyday functioning			
	Limited by physical health problems[a]	Accomplished less due to emotional problems[a]	Limitations for social functioning[b]	
			Some of the time	Most or all of the time
	Prevalence and odds ratios (95% CI)		Prevalence and relative risk ratios (95% CI)	
Migrant-asylum/political	1.73 (0.71–4.20)	2.51 (1.02–6.20)*	0.90 (0.34–2.40)	1.54 (0.43–5.51)
Ethnic group and migration status				
White non-migrant (*n* = 796)	23.0	15.8	26.9	6.8
White migrant (*n* = 255)	21.6	25.3	27.1	8.0
Black Caribbean non-migrant (*n* = 79)	16.2	16.7	38.3	9.9
Black Caribbean migrant (*n* = 64)	26.0	25.0	14.0	15.6
Black African non-migrant (*n* = 55)	5.1	22.9	26.7	6.6
Black African-migrant (*n* = 179)	16.4	16.4	23.1	8.6
Other non-migrant (*n* = 107)	21.0	22.2	27.7	10.9
Other migrant (*n* = 161)	29.0	20.9	29.5	8.7
Unadjusted OR and RRR[c]				
Non-migrant	1	1	1	1
White migrant	0.92 (0.62–1.37)	1.81 (1.25–2.60)**	1.03 (0.73–1.45)	1.22 (0.65–2.30)
Black Caribbean migrant	1.82 (0.77–4.28)	1.66 (0.71–3.91)	0.27 (0.11–0.65)**	1.17 (0.38–3.62)
Black African migrant	3.68 (1.07–12.61)*	0.66 (0.29–1.50)	0.85 (0.40–1.79)	1.29 (0.27–6.18)
Other migrant	1.53 (0.79–2.97)	0.92 (0.51–1.66)	1.06 (0.58–1.92)	0.79 (0.33–1.92)
Adjusted OR and RRR[d]				
Non-migrant	1	1	1	1
White migrant	1.25 (0.81–1.94)	2.06 (1.35–3.15)**	0.94 (0.64–1.38)	1.90 (0.91–3.98)
Black Caribbean migrant	0.12 (0.01–1.03)	1.13 (0.25–5.16)	1.19 (0.37–3.80)[5]	0.61 (0.10–3.67)[e]
Black African migrant	1.40 (0.28–7.05)	0.74 (0.21–2.63)	0.79 (0.26–2.42)	1.17 (0.13–10.48)
Other migrant	1.03 (0.41–2.61)	1.16 (0.56–2.39)	0.85 (0.41–1.75)	0.55 (0.18–1.70)

[a]ORs presented; [b]RRRs presented. Reference category is 'None of the time'; [c]all ORs are within ethnic group comparisons to non-migrants; [d]ethnicity not adjusted for; [e]gender not adjusted for.
*p < 0.05; **p < 0.01; ***p < 0.001.
Note: Weighted percentages account for survey design. Adjusted ORs and RRRs adjust for age, gender, ethnicity, educational attainment, household income, work status and health behaviours.

limitation due to poor mental health compared to non-migrants. Increased odds of functional limitations due to poor mental health were also observed in migrants whose first language was not English compared to non-migrants in both unadjusted and adjusted models.

In fully adjusted models, those who migrated for work or political reasons had increased odds of functional limitations due to poor mental health compared to non-migrants. In comparison to non-migrants within the same ethnic group, White migrants had increased odds of functional limitation due to poor mental health and Black African migrants had increased odds of functional limitation due to poor physical health. However, the association for Black African migrants was attenuated after adjusting for potential confounders.

3.6. Health care service use

As indicated in Table 6, migrants had increased odds of not being currently registered with a GP compared to non-migrants in both unadjusted and adjusted models. In more detailed indicators of migrant status, this association was only observed in migrants who had been residing in the UK for less than five years, White migrants and those who migrated for education or work. In adjusted models, migrants who had been in the UK for 5–10 years had increased odds of seeing a GP for an emotional problem compared to non-migrants while those who had resided in the UK for less than five years had decreased odds. In addition, those who had migrated for education had increased odds of visiting an outpatient department compared to non-migrants in the fully adjusted model. In indicators combining migration status and ethnicity, decreased odds of seeing a GP for an emotional problem were observed in migrants in the Other ethnic group compared to their non-migrant counterparts in the fully adjusted model.

4. Discussion

Using data from the SELCoH study, we aimed to describe and compare the socio-demographic and socio-economic characteristics of migrants and non-migrants in South-east London and to investigate the relationship between migration status and health behaviours, physical and mental health status, functional limitations and health service use. Compared to non-migrants, migrants were disadvantaged in terms of household income despite higher levels of educational attainment, and migration status was associated with functional limitations due to poor mental health and not being registered with a GP. Important differences emerged when migration status was disaggregated by length of residence in the UK, first language, reason for migration and intersected with ethnicity. The association between migration status and functional limitations due to poor mental health was only seen in migrants whose first language was not English, those who migrated for work or a better life and White migrants. There was no association between migration status and self-rated health overall, but Black African migrants and migrants in the Other ethnic group had decreased odds for reporting poor health compared to their non-migrant counterparts. These results demonstrate the methodological importance of disaggregating migrant status and the use of intersectional theory in identifying health inequalities.

Table 6. Indicators of health service use by migration status, length of residence in the UK, first language, reason for migration and by migration status within ethnic groups.

	Health service use				
	Not registered with a GP[a]	Seen a GP[a] for an emotional problem (12 months)	Seen a counsellor or mental health specialist (12 months)	Hospital services (12 months)	
				A and E[b]	Outpatient
	Prevalence and odds ratios (95% CI)				
Non-migrant (n = 1010)	3.4	12.8	8.2	7.5	43.9
Migrant (n = 659)	6.9	12.7	7.7	7.6	46.7
Unadjusted OR migrant	2.12 (1.35–3.34)**	0.99 (0.72–1.36)	0.94 (0.65–1.37)	1.01 (0.68–1.49)	1.12 (0.91–1.38)
Adjusted OR migrant	2.64 (1.46–4.77)**	1.19 (0.79–1.79)	1.33 (0.84–2.10)	1.03 (0.61–1.74)	1.22 (0.94–1.59)
Length of residence in UK (years)					
Migrant >10 years (n = 337)	2.1	12.7	7.5	7.0	52.5
Migrant 5–10 years (n = 178)	4.4	17.5	9.9	10.3	41.6
Migrant <5 years (n = 137)	24.5	5.8	5.8	6.0	37.9
Unadjusted OR					
Non-migrant	1	1	1	1	1
Migrant >10 years	0.61 (0.26–1.42)	0.99 (0.66–1.47)	0.91 (0.57–1.47)	0.93 (0.55–1.55)	1.41 (1.08–1.83)*
Migrant 5–10 years	1.34 (0.64–2.77)	1.44 (0.90–2.30)	1.24 (0.70–2.19)	1.41 (0.81–2.45)	0.91 (0.65–1.27)
Migrant <5 years	9.37 (5.44–16.11)***	0.42 (0.20–0.89)*	0.70 (0.33–1.48)	0.79 (0.35–1.76)	0.78 (0.53–1.13)
Adjusted OR					
Non-migrant	1	1	1	1	1
Migrant >10 years	1.37 (0.54–3.50)	1.21 (0.73–2.01)	1.54 (0.87–2.70)	0.89 (0.38–2.05)	1.30 (0.94–1.82)
Migrant 5–10 years	0.90 (0.32–2.47)	1.95 (1.13–3.37)*	1.74 (0.87–3.48)	1.64 (0.81–3.34)	1.28 (0.86–1.90)
Migrant <5 years	6.01 (3.21–11.24)***	0.40 (0.16–0.99)*	0.67 (0.29–1.55)	0.89 (0.38–2.05)	1.17 (0.74–1.83)

Table 6 (*Continued*)

	Health service use				
	Not registered with a GP[a]	Seen a GP[a] for an emotional problem (12 months)	Seen a counsellor or mental health specialist (12 months)	Hospital services (12 months)	
				A and E[b]	Outpatient
	Prevalence and odds ratios (95% CI)				
First language					
Migrant-English (*n* = 310)	5.8	13.2	7.9	6.5	41.3
Migrant-Other (*n* = 378)	8.2	12.2	7.5	7.8	47.4
Unadjusted OR					
Non-migrant	1	1	1	1	1
Migrant-English	1.78 (1.00–3.16)	1.03 (0.69–1.54)	0.96 (0.58–1.58)	0.86 (1.48–1.67)	0.90 (0.68–1.18)
Migrant-Other	2.56 (1.52–4.29)***	0.95 (0.64–1.41)	0.90 (0.58–1.42)	1.05 (0.65–1.67)	1.15 (0.89–1.48)
Adjusted OR					
Non-migrant	1	1	1	1	1
Migrant-English	2.21 (1.10–4.45)*	1.14 (0.72–1.82)	1.20 (0.68–2.12)	0.98 (0.55–1.78)	0.96 (0.69–1.35)
Migrant-Other	3.01 (1.54–5.88)**	1.13 (0.68–1.88)	1.31 (0.77–2.25)	1.05 (0.65–1.67)	1.24 (0.91–1.70)
Reason for Migration					
Education (*n* = 172)	10.7	8.5	7.7	6.5	47.3
Work/better life (*n* = 181)	8.8	15.3	8.6	8.1	45.8
Family/relationship (*n* = 229)	3.6	14.2	8.1	6.4	48.5
Asylum/political (*n* = 51)	1.4	12.9	5.6	15.5	45.1
Unadjusted OR					
Non-migrant	1	1	1	1	1
Migrant-education	3.46 (1.87–6.41)***	0.63 (0.35–1.14)	0.94 (0.51–1.74)	0.86 (0.45–1.65)	1.15 (0.82–1.61)
Migrant-work/ better life	2.78 (1.51–5.10)**	1.23 (0.73–2.06)	1.06 (0.60–1.88)	1.09 (0.58–2.04)	1.08 (0.76–1.52)

Table 6 (*Continued*)

	Health service use				
	Not registered with a GP[a]	Seen a GP[a] for an emotional problem (12 months)	Seen a counsellor or mental health specialist (12 months)	Hospital services (12 months)	
				A and E[b]	Outpatient
	Prevalence and odds ratios (95% CI)				
Migrant-family/ relationship	1.07 (0.51–2.24)	1.13 (0.73–1.75)	0.99 (0.51–1.74)	0.84 (0.46–1.56)	1.20 (0.89–1.62)
Migrant-asylum/ political	0.40 (0.05–3.00)	1.01 (0.42–2.46)	0.67 (0.15–2.87)	2.26 (0.98–5.24)	1.05 (0.60–1.83)
Adjusted OR					
Non-migrant	1	1	1	1	1
Migrant-education	2.62 (1.27–5.40)**	0.73 (0.35–1.51)	1.13 (0.56–2.29)	0.97 (0.46–2.07)	1.62 (1.11–2.34)*
Migrant-work/ better life	3.71 (1.85–7.42)***	1.66 (0.96–2.87)	1.62 (0.89–2.97)	1.41 (0.72–2.76)	1.17 (0.80–1.71)
Migrant-family/ relationship	1.27 (0.46–3.48)	1.31 (0.77–2.23)	1.57 (0.82–3.00)	0.68 (0.31–1.47)	1.24 (0.84–1.81)
Migrant-asylum/ political	0.92 (0.10–8.43)	0.98 (0.32–3.00)	0.80 (0.11–5.82)	1.04 (0.22–4.93)	1.12 (0.53–2.33)
Ethnic group and migration status					
White non-migrant (*n* = 796)	3.1	12.6	8.4	7.3	46.9
White migrant (*n* = 255)	11.2	15.3	11.6	6.4	49.6
Black Caribbean non-migrant (*n* = 79)	2.3	8.7	5.7	9.5	37.4
Black Caribbean migrant (*n* = 64)	0.8	17.3	9.3	5.3	37.4
Black African non-migrant (*n* = 55)	2.4	11.5	10.2	10.9	29.7
Black African migrant (*n* = 179)	3.6	11.7	3.0	8.4	46.1

Table 6 (*Continued*)

	Health service use				
	Not registered with a GP[a]	Seen a GP[a] for an emotional problem (12 months)	Seen a counsellor or mental health specialist (12 months)	Hospital services (12 months)	
				A and E[b]	Outpatient
	Prevalence and odds ratios (95% CI)				
Other non-migrant (n = 107)	7.1	17.2	7.4	6.0	31.0
Other migrant (n = 161)	6.6	7.3	6.2	9.7	47.4
Unadjusted OR[c]					
Non-migrant	1	1	1	1	1
White migrant	3.98 (2.28–6.92)***	1.25 (0.81–1.93)	1.43 (0.88–2.32)	0.86 (0.45–1.62)	1.12 (0.82–1.51)
Black Caribbean migrant	0.34 (0.03–3.91)	2.18 (0.75–6.33)	1.70 (0.47–6.12)	0.54 (0.13–2.25)	1.00 (0.49–2.06)
Black African migrant	1.55 (0.18–13.03)	1.01 (0.33–3.09)	0.27 (0.09–0.88)*	0.75 (0.28–1.99)	2.02 (0.97–4.21)
Other migrant	0.92 (0.34–2.51)	0.38 (0.17–0.86)*	0.83 (0.31–2.18)	1.67 (0.64–4.36)	2.01 (1.13–3.58)*
Adjusted OR[c,d]					
Non-migrant	1	1	1	1	1
White migrant	3.52 (1.79–6.90)***	1.47 (0.89–2.40)	1.41 (0.83–2.38)	1.22 (0.60–2.49)	1.32 (0.94–1.85)
Black Caribbean migrant	1.86 (0.06–55.90)[e]	2.72 (0.62–11.90)	0.63 (0.08–5.05)	0.13 (0.01–1.35)	0.50 (0.17–1.46)
Black African migrant	2.07 (0.10–41.51)[f]	0.54 (0.14–2.01)	0.23 (0.05–1.07)	0.77 (0.23–2.59)	1.44 (0.57–3.60)
Other migrant	1.08 (0.31–3.80)	0.29 (0.09–0.88)*	0.97 (0.23–4.08)	1.50 (0.48–4.62)	1.51 (0.75–3.07)

[a]General practitioner; [b]accident and emergency; [c]all ORs are within ethnic group comparisons to non-migrants; [d]ethnicity not adjusted for; [e]adjusted for age, gender, educational attainment and health behaviours; [f]adjusted for age, gender, educational attainment, household income and work status.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.
Note: Weighted percentages account for survey design. Adjusted ORs adjust for age, gender, ethnicity, educational attainment, household income, work status and health behaviours.

4.1. Key results

In the current study, migrants were found to have similar health outcomes to non-migrants. This is in contrast to previous studies across North America and Europe. In the USA and Canada, the majority of studies find migrants to be in better health (Argeseanu Cunningham et al. 2008); whereas in Europe, many studies find migrants to be in worse health (Nielsen and Krasnik 2010). In the UK, migrants from some ethnic groups have been shown to have decreased odds of reporting poor health compared to their second generation counterparts after adjusting for SES (Smith, Kelly, and Nazroo 2009). These differences may be the result of arriving from varying geographical contexts but are also likely to differ due to the broad term 'migrant' masking the diversity of migrant groups.

Constantly changing migration patterns have implications for how migrants are received by the host society. Within this sample, a greater proportion of the most recent migrants identified as White and a smaller proportion identified as Black African or Black Caribbean compared to migrants who had been residing in the UK for more than five years, reflecting more recent migration patterns from both original EU member states and EU Accession states. Although the majority of recent migrants reported education or work as the reason for migration, the UK population's perception of migrants is very different. A survey conducted on a representative sample of the British adult population found that 62% thought of refugees or asylum seekers and 29% thought of students when thinking of migrants despite students representing the largest group coming to the UK and asylum seekers and refugees being the smallest group (in 2009; The Migration Observatory 2011). In addition, the British Social Attitudes survey, a representative sample of the British population, found that there was less openness to migrants from non-White ethnic groups (with the exception of Bulgarian and Romanians; the most recent members of the EU; Ford 2011). Perceptions and expectations of migrants in South-east London are likely to have an impact on migrants' experiences and be an important factor in understanding the relationship between migration status and health. Indeed, ascribing characteristics and behaviours to such a heterogeneous group can be problematic. In the UK, current political rhetoric on 'health tourism' implies that migrants choose to move to the UK to use free health services (Hampshire 2005), yet recent studies have suggested that migrants use fewer services than the native born population (Stagg et al. 2012; Steventon and Bardsley 2011). Although the current study found that migrants are less likely to be registered with a GP than non-migrants, we did not find any differences in health service use overall. The passing of the Immigration Act 2014, which puts a framework in place for a new NHS charging structure for migrants in the UK, could have serious implications for more vulnerable migrants such as undocumented migrants and refused asylum seekers (Department of Health 2013). Deterring migrants with complicated immigration status from accessing services could have widespread public health implications. The 'healthy migrant' effect has been shown to deteriorate with length of stay in host country due to acculturation (Hill et al. 2012). However, in this current study, any health advantage recent migrants have in terms of self-rated health is attenuated after adjusting for age and educational attainment (detailed fully adjusted models are available in the Online appendix). Conversely, migrants who had been in the UK for more than 10 years (those with most SES disadvantage) had increased odds of reporting fair or poor health compared with non-migrants. This disadvantage disappeared after controlling for age, ethnicity and household income suggesting that SES is an important factor in the relationship between migration status and health. In both these

examples, adjustments for health behaviours made no difference to the models. At the same time, an association between migration status and functional limitations due to poor mental health was found for migrants whose first language was not English. In this association, language proficiency may not be acting as a proxy for acculturation but simply relating to the ability to communicate (Gee, Walsemann, and Takeuchi 2010). This may also explain the same association for White migrants as 56% of White migrants' first language was not English. Discrimination based on language has also been shown to be a risk factor for poor health in the USA (Yoo, Gee, and Takeuchi 2009) and could be a possible explanatory factor in this sample. Findings from this current study do not support individual level concepts of acculturation adding to a body of research that calls for more focus on structural factors in understanding the role of migration status in health inequalities (Viruell-Fuentes et al. 2012).

Interestingly, although there was no association between migration status and CMD, there was an association with functional limitations due to poor mental health. On disaggregating migration status, the association was only found for those whose first language was not English (as described above), White migrants, and those who migrated for work or a better life. Frustration in relation to unfulfilled expectations has been related to poor mental health in migrant groups previously (Vega et al. 1987) and may explain the association within those who migrate for work or a better life. This frustration due to unfulfilled expectations is also likely to be linked to the increased odds for migrants who have resided in the UK for 5–10 years to see a GP about an emotional problem as this group had twice the odds of reporting functional limitations due to poor mental health compared to non-migrants. Decreased odds for the most recent migrants to see a GP may possibly be affected by a higher proportion not being registered with a GP. In this sample, it may be that the one item question to assess functional limitation due to poor mental health was more sensitive to migrant's feelings of accomplishing less than they expected rather than the interview schedule used to gauge CMD. It has been reported that migrants selectively report on their lives due to expectations (Massey 2006), and this may be a topic that needs further exploration in understanding migration status and its relation to CMD and functional limitations due to poor mental health.

In the current study, we were also able to show that many of the relationships between migrant status and health-related outcomes differed when migration status was intersected with ethnicity. In particular, Black African migrants and migrants from the Other ethnic group were less likely to report fair or poor health than their non-migrant counterparts. This does not reflect the differences in age range or SES between migrants and non-migrants within this group. There is some indication that the UK population is less open to migration from non-White ethnic groups (Ford 2011), and so experiences of discrimination may also be an important confounder for the relationship between migration status, ethnicity and health outcomes. In another UK sample, it was suggested that non-migrants' differential reaction to discriminatory experiences may account for differences in self-rated health (Smith et al. 2009). Unfortunately, we were not able to address this in the current analysis. Overall, the findings in this study reinforce evidence in the UK (Smith et al. 2009) and elsewhere (Kobayashi et al. 2008) that migration status has differing effects on health across different ethnic groups.

4.2. Strengths and limitations

This study is based on cross-sectional survey data and so we were unable to make causal inferences in assessing the relationship between migration status and health outcomes. This is also a local study of South-east London and although it highlights important methodological issues in investigating migration status, the findings of the study need to be understood in the context of the sample area. It should also be noted that the non-response rates at the household level may have resulted in participation bias; thus, the prevalence estimates should be considered with caution. Moreover, we were only able to focus on health outcomes within the host country and did not have detailed information to assess how the migration process, period of stay in other countries and pre-migration period may have impacted health. At the same time, there are strengths to this study. It contains a diverse sample of migrants which is representative of the local population according to ONS figures (Office for National Statistics 2013). By using interpreters, we were able to include non-English speaking participants in the sample. Finally, the data collected in this study allowed us to capture an extensive and detailed profile of health behaviours, physical and mental health symptoms, functional limitations and health service use.

4.3. Implications

The current study not only provides much needed quantitative data on the relationship between migration status and health inequalities in the UK but also demonstrates the importance of carefully considering how migration status is used methodologically as an explanatory variable. This study raises further questions about the impact of other social statuses on migration status, such as gender. While beyond the scope of this current study, it may be important to capture the known differences in migrant experience by gender in reference to health. Migrant experience in a host country will likely be shaped by ascribed positions based on multiple statuses and this may, in turn, impact how health inequalities develop and change over time. Migration status matters for understanding health inequalities, but it is best understood in the context of how it intersects with other social statuses.

study design; collection, analysis or interpretation of data; the writing of the manuscript; or in the decision to submit the manuscript for publication.

Supplemental data

Supplemental data for this article can be accessed at http://dx.doi.org/10.1080/13557858. 2014.961410

Key messages

(1) Few differences found between migrants and non-migrants in terms of health or health service use.
(2) Important differences emerged when migration status was disaggregated by length of residence in the UK, first language, reason for migration and intersected with ethnicity.
(3) Intersectional analysis of migration status leads to better understanding of migrant health.

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