

Migration, Ethnicity and Mental Health: evidence from mothers participating in the Millennium Cohort Study

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Abstract

Objectives

Over a quarter of UK births are to women who were born outside of the UK. Black and Minority Ethnic (BME) women are disproportionately affected by poor mental health and inequitable access to mental healthcare in the perinatal period, yet the influence of migrant status (mothers' UK vs. non-UK birth) is poorly understood. This study aimed to explore the relationship between ethnicity, migration and mental health indicators among mothers participating in a large nationally representative cohort study.

Study design

Secondary analysis of data from the Millennium Cohort Study.

Methods

Logistic regression quantified the crude and adjusted effects of self-reported ethnicity and migrant status on prevalence of psychological distress and treatment for anxiety/depression at 9-months and 5-years post-partum.

Results

We found substantial variation in the prevalence of distress according to ethnicity and migrant status, with Indian and Pakistani women at greatest risk. Despite equal or greater risk, BME and migrant women were less likely to report treatment for anxiety/depression. Mutually-adjusted analyses showed ethnicity to be a stronger predictor of both outcomes than migrant status; however, at 5-years, being a migrant independently predicted lower odds of treatment, for a statistically similar level of distress.

Conclusions

Migrant women are likely to be at high risk of poor mental health in the perinatal period and beyond, yet may face significant barriers to accessing mental healthcare. A better understanding of ethnicity and migration as interrelated risk factors for perinatal mental ill-health is needed to help NHS organisations develop policy and practice that is flexible and responsive to diversity.

Introduction

Migration (for the purposes of this paper, living outside one's country of birth) is increasingly recognised as a social determinant of physical and mental health^{1,2,3}. The scale and pace of migration to the UK calls for a better understanding of the health needs of migrants, yet study of this population is limited by data availability, difficulty reaching underserved populations, political sensibility and the close correlation between migrant and ethnic minority status². Internationally, evidence of the impact of migration on mental health is mixed and sometimes contradictory². Conflict, gender-based violence, persecution, political instability and traumatic migration experiences place a minority of migrants, who tend to be the focus of most UK studies^{4,5}, at particularly high risk^{4,5}. Conversely, a 'healthy migrant effect' (self-selection of individuals who are resilient to the stresses of migration) has also been associated with relatively good mental health². Regardless of prior experience, post-migration stressors such as social isolation, lack of familiarity with health systems, poor host language proficiency and precarious legal status can negatively impact mental health⁶.

A rapidly increasing proportion of UK births are to migrant women (from 11.6% in 1990 to 28.2% in 2016⁷). Common Mental Disorder (CMD), encompassing different types of depression and anxiety⁸, is highly prevalent in the perinatal period (pregnancy and the year after birth)⁹ and is associated with short- and long-term adverse effects on both mothers and child development, particularly if untreated or persistent^{9,10,11}. Postnatal cases often continue from pre-pregnancy/pregnancy, and around one-third of affected women have symptoms beyond a year after delivery¹². Perinatal CMD disproportionately affects Black and Ethnic Minority (BME) women^{13,14,15}, who may also experience chronic and persistent symptoms due to lower rates of identification and treatment^{16,17,18}. Whilst social factors are thought to be central to this inequality^{19,20,21} the influence of migration is poorly understood. Despite considerable heterogeneity, most studies of perinatal CMD among migrants suggests a higher risk compared with non-migrants, particularly among women from low- and middle-income countries^{22,23,24}. However, few UK studies have attempted to disentangle the effects of migration and ethnicity, or have investigated the effect of mothers' non-UK birth on use of and access to mental health care^{25,26}.

This study used existing data to explore the relationship between ethnicity, migration and indicators of mental health, in a nationally representative sample of mothers participating in a longitudinal cohort study. In the absence of diagnostic interviews for CMD, we estimated the relative risk of psychological distress (a state of emotional suffering characterized by symptoms of depression and anxiety)²⁷ and the relative risk of self-reported treatment for anxiety/depression between maternal ethnic groups and by migrant status (mothers' UK vs. non-UK birth), during the first postnatal year and five years after the birth of their child.

Methods

Study design and setting

The Millennium Cohort Study (MCS) is a nationally representative longitudinal study of 18818 infants born in the UK between September 2000 and January 2002. A random two-stage sample was drawn from child benefit registers, with stratified sampling at electoral ward level and over-sampling of ethnic minority and disadvantaged areas, to ensure adequate representation of these populations. Infants were included if alive and living in the UK at 9-months of age²⁸. Although UK child benefit coverage is near complete and not is

limited to British citizens, ineligibility due to recent or temporary immigrant status would exclude some vulnerable migrant groups who face significant barriers to healthcare²⁹. Parents were interviewed when children were aged 9-months, 3-years, 5-years and subsequently every 2-4 years, covering a range of socio-economic and health factors³⁰. We analysed the prevalence of non-specific psychological distress and treatment for anxiety/depression among participating mothers, according to ethnicity and migrant status (UK vs. non-UK birth). These outcomes were examined when participating children were aged 9-months and 5-years – two time points representing significant life periods for parents, namely the first post-natal year and the end of the pre-school period.

Study period and participants

We included all women participating in the MCS at 9-months, who were birth mothers of singletons residing in England and whose ethnicity and country of birth were recorded. Women residing in UK countries other than England were excluded due to relatively low ethnic minority density and differing policy contexts in these settings. The 5-years sample 'pool' was a subset of 9-months, excluding those who did not respond or were no longer eligible (died or emigrated). Final sample sizes varied by outcome, due to data availability (Figure 1).

Measures

Data on mother's country of birth and ethnicity were drawn from the 'main respondent' interview, which included a self-completion module and were conducted with the aid of an interpreter if necessary (8% of interviews at 9-months). Translated materials were limited to information and advice sheets and consent forms. Ethnicity was self-reported in the first survey with reference to 2001 census categories³⁰. Due to small numbers of migrants across some ethnic minority groups, the following categories were used: white British, Indian, Pakistani, Bangladeshi and black African. 'Black Caribbean' and 'white Irish' categories were omitted due to small numbers, particularly of migrant women. 'Mixed' and 'other' categories were omitted due to a level of ethnic and geographic diversity that would limit meaningful analysis. Country of birth was available from linked birth registration records and/or self-reported at 3-years, determining migrant status for 94.3% of our initial sample.

At 9-months, psychological distress was defined as a score of ≥ 4 (of a maximum of 9) on a modified version of the Rutter Malaise Inventory (RMI), designed to identify individuals at risk of depression³¹. This contained 9 yes/no questions selected from the full 24-item inventory and was tested using Cronbach's alpha coefficient to ensure reliability of at least 0.7³². At 5-years, psychological distress was defined as a score of ≥ 13 (of a maximum of 24) on the six-item Kessler scale (K6), originally developed to identify cases of serious mental illness³³. Both inventories were administered by self-completion³². Although both have performed well in large population studies^{34,35}, scores are not directly comparable since each identifies different levels of psychological distress. Because we were principally interested in relative, rather than absolute levels of psychological distress, we did not consider this a major limitation.

Treatment for anxiety/depression at the time of the survey (hereafter 'current treatment') was self-reported at 9-months and 5-years, defined as a positive response to both of the following questions:

- *Has a doctor ever told you that you suffer from depression or serious anxiety?*
- *Are you currently being treated for this?*

Other sociodemographic and pregnancy-related explanatory variables were ascertained from self-reported data collected at 9-months (Table 1).

Statistical analyses

All statistical analyses were completed in STATA/SE version 13.1 (StataCorp, USA), using survey specific weights and survey commands to adjust for sampling design and non-response. Logistic regression modelling explored the crude and mutually-adjusted effects of ethnicity and migrant status on psychological distress and current treatment at 9-months and 5-years. Further multivariable modelling quantified the extent to which any observed differences were explained by known sociodemographic and pregnancy-related variables, however since many of these may be considered mediators, rather than confounders, of inequalities experienced by migrant/ethnic minority women³⁶, results focus primarily on mutually- rather than fully-adjusted results. Individual models for each outcome incorporated all such variables which were deemed to be potentially relevant, for which data were available, were associated with the outcome of interest (Chi-squared $p < 0.1$) and which retained statistical significance ($p < 0.05$) in the final model.

Ethics

Use of MCS data was registered with the UK data service; however, since the study utilised existing data, no separate ethics committee application was required. The original medical research ethical clearance for the first MCS survey was granted from the National Health Service Ethical Authority in February 2001 (MREC/01/6/19) and for the third MCS survey by the London Multi-centre Research Ethics Committee of the NHS in December 2005 (REC Reference No. 05/MRE02/46).

Figure 1

Results

Description of the study population

Outcome data were available for 10,333-10,838 women at 9-months and 8,044-8,728 women at 5-years (Figure 1). Overall, 2.6% of women had RMI score missing and 5.1% had K6 score missing, but these proportions varied by ethnicity, being highest for Bangladeshi women (24.3% for RMI and 48.1% for K6). 14.0% and 27.4% of migrants were missing RMI and K6 data respectively, compared to 1.9% and 2.1% of non-migrants.

Table 1 displays sociodemographic and pregnancy-related characteristics for the 9-month sample who had RMI data. Migrant women accounted for 10.5% of the sample overall (survey weighted percentage), including 59.8% of women who were not included in a specific ethnic category. Migrants were slightly older, more highly qualified, less likely to speak English at home, less likely to report primiparity or preterm birth, and more likely to report C-section than non-migrants. The proportion migrants in each ethnic minority group ranged from 47.2% (Indian) to 89.0% (Bangladeshi). All sociodemographic characteristics were statistically significantly associated with ethnicity.

Table 1

9-months results

Prevalence of psychological distress was 13.2% among non-migrants and 15.2% among migrants, ranging between ethnic groups from 12.7% (black African) to 23.3% (Pakistani) (Table 2). Prevalence of current treatment was 8.6% among non-migrants and 4.6% among migrants, ranging between ethnic groups from 2.5% (black African) to 8.7% (white British).

In univariable analyses, both migrant status and ethnicity were statistically significantly associated with both outcomes. Compared with non-migrants, migrants had statistically significantly increased odds of psychological distress (OR 1.18) and decreased odds of treatment (OR 0.51) (Table 2). Compared with white British women, Indian and Pakistani women had a two-fold increase in odds of distress (a similar result for Bangladeshi women was not significant). All ethnic minority groups had lower odds of current treatment than white British women. This was statistically significant for Indian (OR 0.52) and black African women (OR 0.27).

After mutual adjustment, the effect of ethnicity was much stronger than migrant status on psychological distress ($p < 0.001$ vs. $p = 0.159$) and current treatment ($p = 0.007$ vs. $p = 0.110$). No independent effect of migrant status was observed for either outcome (Table 2, Figure 2). Notably, adjustment strengthened the association between ethnic minority status and distress and attenuated the association with current treatment.

The independent effect of ethnicity on both outcomes remained statistically significant even after full adjustment.

5-years results

Prevalence of psychological distress was 3.1% among non-migrants and 4.4% among migrants, ranging between ethnic groups from 2.9% (white British) to 6.9% (Bangladeshi). Prevalence of current treatment was 7.7% among migrants and 3.6% among non-migrants, ranging between ethnic groups from 1.5% (black African) to 7.7% (white British).

In univariable analyses, ethnicity was statistically significantly associated with both outcomes, however, migrant status was only associated with current treatment (OR 0.45).

Compared with white British women, odds of psychological distress remained statistically significantly increased for Indian women (OR 2.33) and Pakistani women (OR 2.37). As at 9-months, all ethnic minority groups had lower odds of current treatment than white British women. This difference was statistically significant for Indian (OR 0.34), Pakistani (OR 0.61) and black African women (OR 0.18). Of note, observed disparities were wider at 5-years than 9-months.

After mutual adjustment, ethnicity was the stronger predictor of distress ($p < 0.001$ vs. $p = 0.402$ for migrant status). However, both variables independently predicted current treatment ($p = 0.018$ for both) (Table 2, Figure 2). As at 9-months, adjustment strengthened the association between ethnic minority status and distress and attenuated the association with current treatment.

Contrasting with 9-months analyses, the independent effect of ethnicity on both outcomes disappeared after full adjustment (except for black African women). However, the association between migrant status and current treatment prevailed (OR 0.61).

Table 2

Figure 2

Discussion

Main findings

In unadjusted analyses, this study found a higher risk of psychological distress among migrant compared with non-migrant women in the first postnatal year and at 5 years after the birth of their child, although neither effect was strongly statistically significant. Relative risk of distress varied significantly between ethnic groups at both time points, with Indian and Pakistani women at greatest risk. Despite having equal or greater risk of distress, migrant women were half as likely as non-migrant women to report treatment for anxiety/depression at both time points. Similar disparities affected ethnic minorities, with treatment prevalence substantially lower among black African women compared with white British women at 5-years (1.5% versus 7.7%), despite a higher level of distress (6.0% versus 2.9%).

Mutually adjusted analyses showed ethnicity to be a much stronger predictor than migrant status of relative risks of psychological distress and current treatment, except for one outcome (current treatment for anxiety/depression at 5-years), where the effect of migrant status was independent of the effect of ethnicity. In fully adjusted analyses, the relative risks for some ethnic minority groups attenuated somewhat, suggesting that other factors may have been acting as mediators or confounders.

Strengths and limitations

This study's main strength is that it is based on a large nationally representative sample of mothers and is therefore generalisable to England. Furthermore, it uniquely attempts to quantify the effects of both ethnicity *and* migration on indicators of mental health and care in the first postnatal year and after five years.

However, some important limitations mean that our results may underestimate true effects. First, precision and power were limited by small numbers of ethnic minority and migrant women, and a lower number of 'cases' of psychological distress at 5-years (related to the fact that K6 is validated to identify serious, rather than mild or moderate, mental illness). Although effects observed were largely consistent between time points, these were not always statistically significant. Small numbers also prevented inclusion of some important ethnic categories, including black Caribbean and white Irish women¹⁴. Furthermore, the use of broad ethnic and migrant categories will have led to substantial within-group heterogeneity, particularly in terms of length of residence and pre/peri-migration experience. Importantly, we have not differentiated between forced migration and those who migrate by choice (e.g. refugees vs. economic migrants).

We relied on epidemiological screening tools rather than clinical diagnosis, with limited evidence of cross-cultural validity³⁷ that may have led to a lower rate of detection of distress among minority cultures. In addition, missingness was strongly associated both with ethnicity and migrant status. Further analyses (not presented here) suggest that language proficiency and socioeconomic factors only partially explain this, and we hypothesise higher rates of psychological distress in non-responders. 'Current treatment' of anxiety/depression as an outcome measure relied on self-reporting in response to a two-stage question, and thus may lack validity. Interpretation of 'treatment' (in particular psychological vs. pharmacological) may vary between cultures, and we were unable to ascertain whether treatment was not offered or not accepted.

The UK is undergoing a period of rapid change with respect to immigration patterns, policy and legislation. The fact that the inequalities we demonstrate predate some important recent

developments, including the official 'hostile environment' policy towards illegal immigration, makes our results even more pertinent, given potential associations of aspects of this policy with increasing stigma and discrimination faced by the wider migrant population^{38,39}.

Interpretation and implications

This study's findings are consistent with existing evidence of perinatal mental health inequalities affecting BME women in the UK, particularly those of Asian descent^{15,17}. By accounting for both ethnicity and migrant status, this study adds that the disadvantage faced by BME women is likely to exist regardless of whether they are a first or higher generation migrant. The reasons for this are likely to be complex, context specific and multifactorial. Ethnic minority women in general experience higher levels of social and material deprivation, including social isolation^{20,15}. However, socioeconomic variables only partially explain differences between groups, thus implicating other risk factors such as cumulative exposure to minority status and accompanying social marginalisation and racism¹⁹.

Ethnic inequalities in use of mental health services in general are well documented^{16,40}, although little research has focused on the perinatal period⁴¹. Based on a large 2010 survey, Henderson et al. (2013) found minority ethnic groups to have poorer experiences of maternity services than white women⁴². Our findings support evidence from the 2014 National Maternity Survey in England, which shows that non-white women were less likely to be asked about their mental health or to receive support or treatment, either antenatally or postnatally, with Asian women being most at risk⁴³. This is despite 2007 changes to NICE guidance, which recommends routine antenatal and postnatal screening for CMD using 'ultra-brief' case findings questions⁴⁴. Using data from the UK Born in Bradford cohort study conducted between 2007-2010, Prady et al. (2016) showed that participating Pakistani women (one third of whom were non-UK born), were less likely than white British women to be screened in primary care or identified as having CMD, for a similar level of psychological distress¹⁷. Minority ethnic women were 58% less likely to receive treatment for CMD in the first postnatal year, despite higher risk¹⁸.

In contrast to distress, 5-year findings in our study (mutually adjusted and fully adjusted models) suggest that being a migrant may be associated with poorer access to mental healthcare, placing women who are both BME *and* migrant at even greater risk. It is possible that more structured access to healthcare diminishes this effect in the postnatal period, which could contribute to lack of statistical significance at 9-months (notwithstanding the caveat of small numbers and potential power implications). In a systematic review of largely European studies, Sarría-Santamera et al. (2016) concluded that migrants have a similar or lower use of general health services than native populations, independent from differences in need²⁵. Limited UK research suggests this may be true of more recent migrants^{45,46}, yet scarce evidence specifically relates to women, who by virtue of their gender may face particular barriers to care.

Disorder identification and treatment depends on both individual and system factors. Some evidence suggests lower levels of 'help seeking' by ethnic minority and migrant women in relation to perinatal and general mental health, due to language difficulties, poor health literacy, lack of familiarity with health systems, cultural beliefs and practices, normalisation of pregnancy and postnatal symptoms, and practical barriers such as transport costs^{47,48}. However, many of these factors place the onus on women, characterising them as 'hard to reach' rather than 'underserved'. Conversely, targeted interventions are needed to reduce system barriers to mental healthcare for ethnic minority and migrant women, that consider language, accessibility of information, cross-cultural applicability of screening instruments, appropriate treatment and support options, and ways to address institutional racism^{19,49,41}.

Finally, legal entitlement to care is a particularly worrying determinant of migrant and ethnic minority health. Increasingly restricted access to NHS services mean that some women may now be asked to pay upfront for maternity and other secondary care services³. In addition to denying care to vulnerable individuals, confusion around the rules can act as a barrier to other women who *are* entitled to UK NHS healthcare³⁹.

Conclusions

By bringing women into close contact with health services, the perinatal period offers an important window of opportunity to identify and treat CMD, to address inequality and to prevent intergenerational impacts of poor mental health. Ethnic minority and migrant status may act as interrelated risk factors for poor mental health and access to mental healthcare. Further research into migrant and BME women's mental health needs and experiences is needed, in order to develop NHS policies and practices that are more responsive to an increasingly diverse UK population. Such research would benefit from better routine data collection on country of birth as well as ethnicity, to monitor, understand and improve migrant health.

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Figure 1: Exclusions and final sample sizes

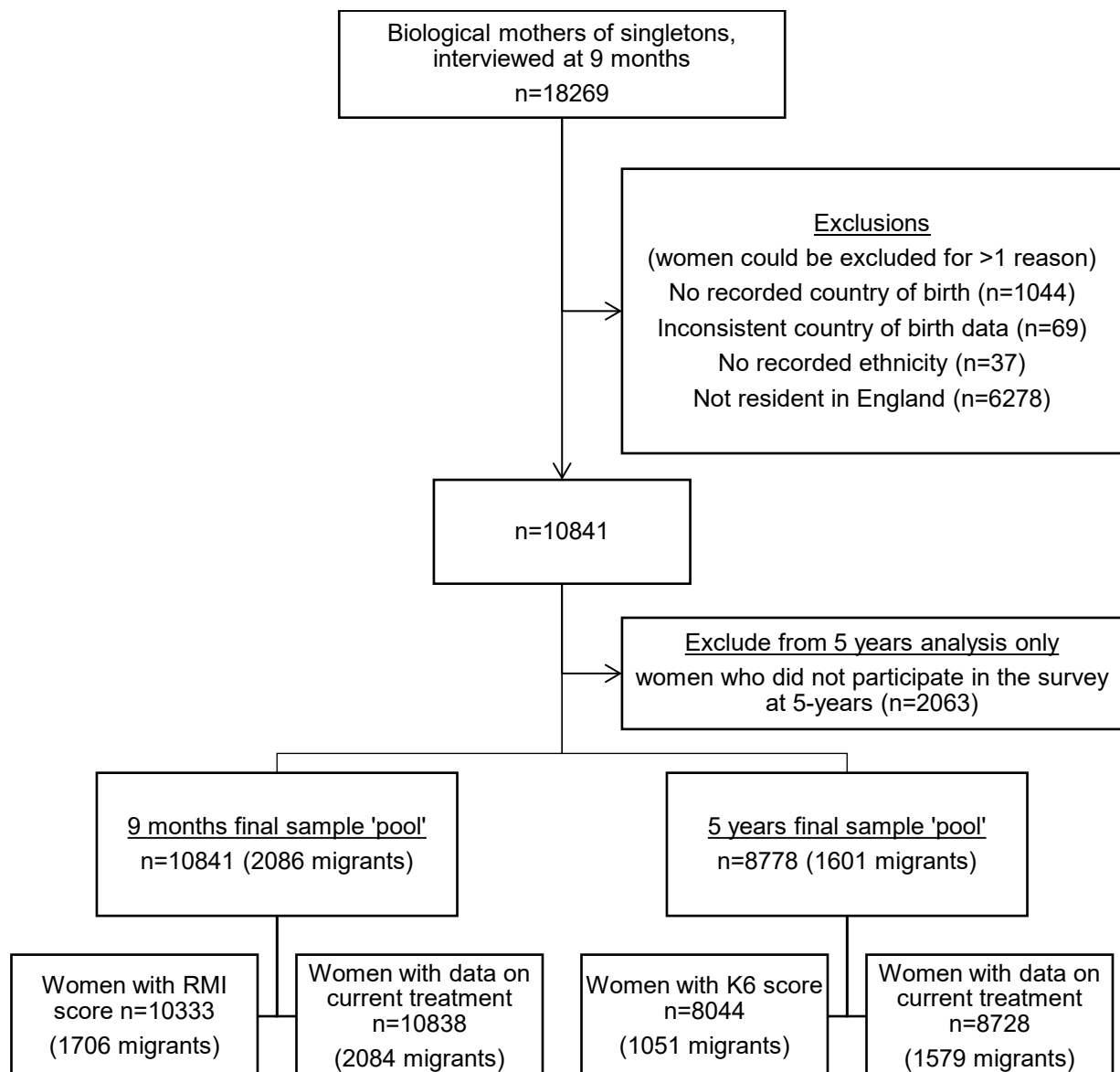


Figure 2: Mutually adjusted odds ratios for psychological distress and treatment for anxiety/depression at 9-months and 5-years, by migrant status (migrant compared with non-migrant women) and ethnic minority group (compared with white British)

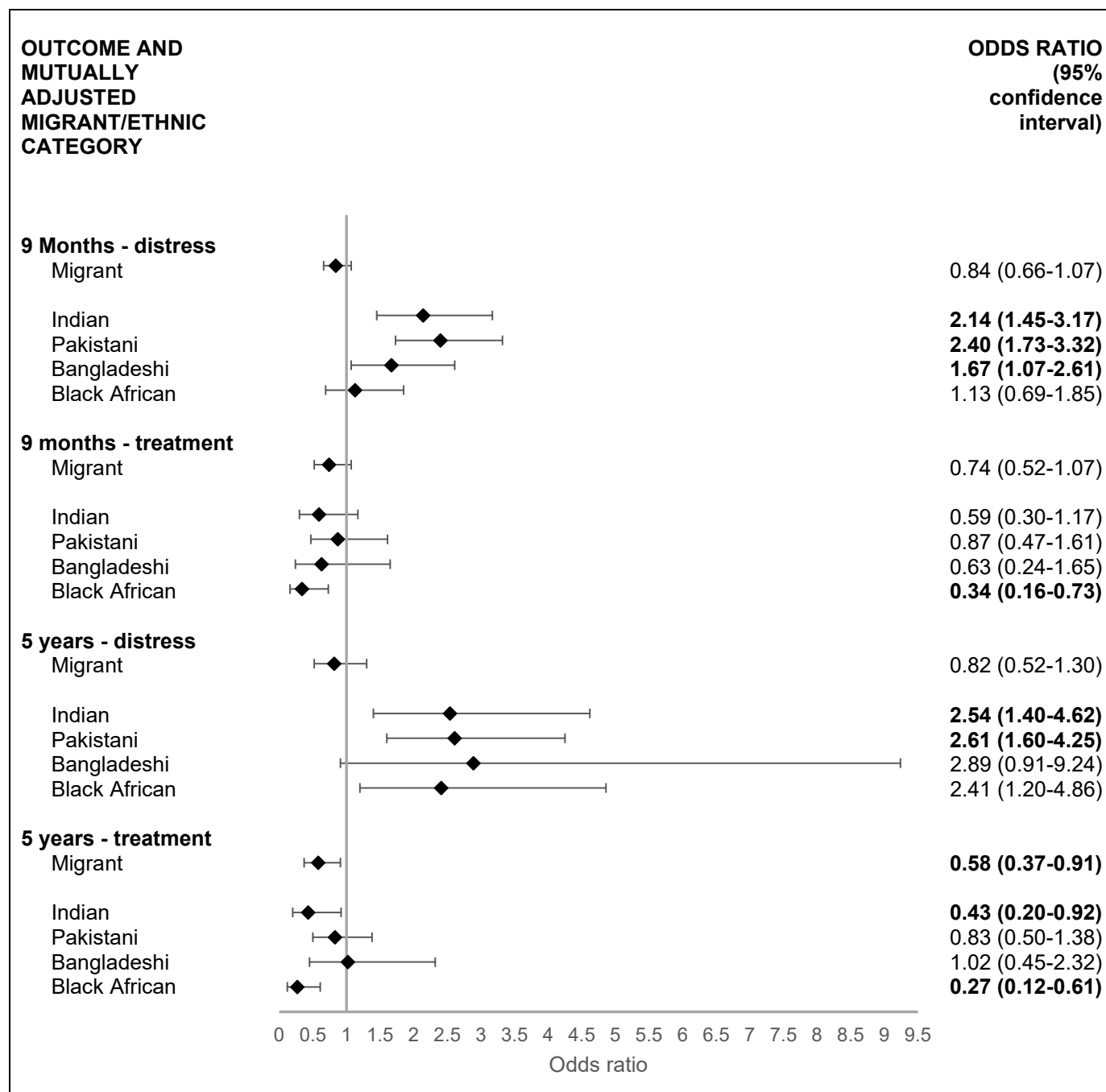


Table 1: Sociodemographic and pregnancy-related characteristics for participants with Rutter Malaise Inventory score at 9-months (survey-weighted percentages), by migrant status and ethnicity

	MIGRANT STATUS			ETHNICITY					
	Non-migrant (n=8627)	Migrant (n=1706)	Category p-value*	White British (n=7857)	Indian (n=374)	Pakistani (n=646)	Bangladeshi (n=235)	Black African (n=287)	Category p-value*
Migrants (%)	-	-	-	2.0	47.2	56.1	89.0	75.6	<0.001
Age (mean)	28.7	29.7	0.002	28.8	28.9	26.5	26.4	30.5	<0.001
Highest qualification National Vocational Qualification (NVQ) 4/5 (%)	32.8	35.5	<0.001	32.7	44.5	13.8	12.0	44.1	<0.001
Higher managerial/admin/professional employment class (%)	31.1	25.7	<0.001	31.3	30.2	9.9	10.2	23.1	<0.001
Lone parent (%)	13.9	12.0	0.261	13.3	4.1	7.4	6.2	37.2	<0.001
Religion (%)			<0.001						<0.001
None	50.4	20.		52.2	7.9	1.0	1.6	4.6	
Christian/Catholic	45.7	34.2		46.6	4.4	0	0	67.8	
Muslim	2.0	33.1		0.2	13.4	97.8	95.3	26.1	
Hindu/Sikh	1.0	10.5		0.1	72.4	0.8	2.8	0	
Other	0.9	2.3		0.9	0.9	0.3	0.3	1.6	
Any English spoken at home (%)	99.7	84.4	<0.001	100.0	90.5	76.3	67.6	88.3	<0.001
Primiparity (%)	43.0	39.3	0.035	42.9	41.7	33.0	28.9	32.4	<0.001
Pre-term birth (%)	7.2	5.5	0.027	7.0	10.1	6.3	8.0	7.9	0.318
Caesarean section (%)	20.5	24.3	0.014	20.5	21.2	19.6	16.1	34.0	<0.001
Planned pregnancy (%)	58.6	56.5	0.235	59.2	61.1	51.9	46.3	36.4	<0.001
Median length of residence (years)**	-	11		27	9	11	14	9	

* Chi-squared p-value for association between migrant status/ethnicity and characteristic

** Non-survey weighted median. Migrants only.

*** Age group p-value

Table 2: Prevalence and odds ratios for psychological distress and current treatment for depression or anxiety at 9 months and 5 years, by migrant status and ethnicity

		PSYCHOLOGICAL DISTRESS					CURRENT TREATMENT				
		n ^a	Prevalence (%)	Unadjusted OR (95%CI)	Mutually adjusted OR ^b (95%CI)	Fully adjusted OR ^c (95%CI)	n ^a	Prevalence (%)	Unadjusted OR (95%CI)	Mutually adjusted OR ^b (95%CI)	Fully adjusted OR ^d (95%CI)
9 Months	Migrant status (p-value)	-	-	0.031	0.159	0.078	-	-	<0.001	0.110	0.166
	Non-migrant	8627	13.2	Baseline	Baseline	Baseline	8754	8.6	Baseline	Baseline	Baseline
	Migrant	1706	15.2	1.18 (1.02-1.37)	0.84 (0.66-1.07)	0.79 (0.60-1.03)	2084	4.6	0.51 (0.40-0.66)	0.74 (0.52-1.07)	0.76 (0.52-1.12)
	Ethnicity (p-value)	-	-	<0.001	<0.001	<0.001	-	-	<0.001	0.007	0.002
	White British	7857	12.8	Baseline	Baseline	Baseline	7935	8.7	Baseline	Baseline	Baseline
	Indian	374	22.5	1.98 (1.38-2.85)	2.14 (1.45-3.17)	2.26 (1.48-3.47)	418	4.7	0.52 (0.27-0.99)	0.59 (0.30-1.17)	0.63 (0.33-1.22)
	Pakistani	646	23.2	2.18 (1.67-2.86)	2.40 (1.73-3.32)	1.90 (1.31-2.75)	787	6.6	0.74 (0.44-1.25)	0.87 (0.47-1.61)	0.76 (0.39-1.46)
	Bangladeshi	235	17.4	1.43 (0.99-2.10)	1.67 (1.07-2.61)	1.26 (0.79-2.00)	317	4.4	0.48 (0.20-1.17)	0.63 (0.24-1.65)	0.51 (0.19-1.37)
	Black African	287	12.7	0.99 (0.63-1.56)	1.13 (0.69-1.85)	0.90 (0.53-1.51)	326	2.5	0.27 (0.13-0.58)	0.34 (0.16-0.73)	0.26 (0.12-0.55)
5 years	Migrant status (p-value)	-	-	0.070	0.402	0.116	-	-	<0.001	0.018	0.038
	Non-migrant	6993	3.1	Baseline	Baseline	Baseline	7149	7.7	Baseline	Baseline	Baseline
	Migrant	1051	4.4	1.42 (0.97-2.08)	0.82 (0.52-1.30)	0.66 (0.39-1.11)	1579	3.6	0.45 (0.32-0.64)	0.58 (0.37-0.91)	0.61 (0.38-0.97)
	Ethnicity (p-value)	-	-	<0.001	<0.001	0.381	-	-	<0.001	0.018	0.053
	White British	6475	2.9	Baseline	Baseline	Baseline	6582	7.7	Baseline	Baseline	Baseline
	Indian	284	6.6	2.33 (1.32-4.11)	2.54 (1.40-4.62)	1.53 (0.75-3.12)	336	2.7	0.34 (0.16-0.69)	0.43 (0.20-0.92)	0.82 (0.47-1.43)
	Pakistani	372	6.7	2.37 (1.46-3.85)	2.61 (1.60-4.25)	1.22 (0.58-2.58)	573	4.9	0.61 (0.39-0.95)	0.83 (0.50-1.38)	0.69 (0.31-1.54)
	Bangladeshi	119	6.9	2.47 (0.81-7.56)	2.89 (0.91-9.24)	1.42 (0.43-4.63)	239	5.1	0.63 (0.30-1.35)	1.02 (0.45-2.32)	0.83 (0.30-2.28)
	Black African	159	6.0	2.13 (0.98-4.61)	2.41 (1.20-4.86)	2.16 (1.01-4.61)	249	1.5	0.18 (0.08-0.41)	0.27 (0.12-0.61)	0.25 (0.11-0.58)

^a Non-survey weighted denominators

^b Mutually adjusted for migrant status/ethnicity

^c 9 months adjustments: migrant status/ethnicity, age, employment class, highest qualification, lone parent status, planned pregnancy, primiparity. 5 years adjustments: migrant status/ethnicity, age, employment class, highest qualification, primiparity, planned pregnancy, religion

^d 9 months adjustments: migrant status/ethnicity, employment class, highest qualification, lone parent status, planned pregnancy, primiparity, caesarean section. 5 years adjustments: migrant status/ethnicity, highest qualification, planned pregnancy, religion

