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## Trends in suicide among migrants in England and Wales 1979–2003

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**Objective.** Trends in suicide death rates among migrants to England and Wales 1979–2003 were examined.

**Methods.** Age-standardised rates derived for eight country of birth groups.

**Results.** For men born in Jamaica, suicide death rates increased in 1999–2003. There were declines in rates for men and women from India and from Scotland, men from East Africa and Northern Ireland and women from the Republic of Ireland. For both men and women born in Scotland or the Irish Republic, despite declines for some, rates remained higher than for England and Wales born. Rates among men from Pakistan were consistently lower than men born in England and Wales.

**Conclusion.** These analyses indicate declining trends for most migrant groups and for England and Wales-born women, but adverse trends in death rates for some country of birth groups.

**Keywords:** suicide; migrants; England and Wales

### Introduction

Previous research on suicide mortality among migrants by country of birth showed that, compared to those born in England and Wales, there was higher risk particularly among women from India (Raleigh *et al.* 1990, Raleigh and Balarajan 1992, Raleigh 1996, Maxwell and Harding 1998) and among men and women from Scotland and Ireland (Maxwell and Harding 1998). Men and women born in the Caribbean and South Asia-born men had lower risk (Raleigh and Balarajan 1992, Raleigh 1996, Maxwell and Harding 1998).

We report the trends over time in rates in mortality from suicide in England and Wales between 1979 and 2003, by country of birth.

### Methods

More detailed description of the methodology can be found elsewhere (Harding *et al.* 2009). The Office for National Statistics (ONS) provided anonymised death records for 1979–1983, 1989–1993 and 1999–2003, and tabulated population data from the 1981, 1991 and 2001 Censuses for England and Wales. Deaths and

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populations-at-risk were derived by country of birth in five-year age bands for men and women separately and on those aged 20–69 years at the respective censuses. The countries were England and Wales, India, Pakistan, Jamaica, Northern Ireland, Republic of Ireland and Scotland. In addition, an East African group, comprising migrants from Kenya, Malawi, Tanzania, Uganda and Zambia, was separately defined as at the 1991 and 2001 censuses over 65% of migrants from East Africa were of Indian origin (OPCS/GRO 1993; <http://www.statistics.gov.uk/StatBase/ssdataset.asp?vlnk=7547&Pos=&ColRank=2&Rank=256>). Countries of birth were included if definitions of countries were comparable over the three time periods in both the deaths and census data, and if at least 10 deaths were recorded per 10-year age band (i.e. at least 50 deaths in total) in the third time period (1999–2003) and at least one previous time period. Numbers of deaths were too small to calculate meaningful rates for women from East Africa, Ireland, Jamaica and Pakistan. Suicide was defined as deaths resulting from intentional self-harm and events of undetermined intent using International Classification of Disease (ICD) codes ICD-9: E950-959 (excluding pending verdicts E988.8) and E980-989; ICD-10: X60-X84, Y10-Y34, Y87.0 and Y87.2 (excluding Y33.9). Trends in absolute mortality were assessed using directly standardised rates, adjusted to the European standard population in 2000 (<http://www.statistics.gov.uk/STATBASE/xsdataset.asp?vlnk=1260&More=Y>).

## Results

Table 1 shows that suicide death rates remained relatively stable across time periods for England and Wales-born men with a small increase in rates over time. There were also small increases in rates for men born in Pakistan and the Irish Republic, and a substantial increase in rates for Jamaican men in the last period. Small to moderate decreases in rates were reported for men born in India, Northern Ireland, Scotland and East Africa. In all three periods, men born in Pakistan had lower rates and those born in Scotland and the Irish Republic had higher rates compared to England and Wales-born men. In the final period only (1999–2003), compared to men born in England and Wales, Jamaica-born men had higher rates and, conversely, men born in India and East Africa reported lower rates for the first time. The pattern of higher rates for Northern Ireland men in the first two periods was not evident in the third period. Among women, suicide death rates declined for all country of birth groups included in the analysis (Table 1). Compared to women born in England and Wales, rates were consistently higher for those from Scotland and women from the Republic of Ireland, and higher in the first two periods but similar in the last time period for India-born women.

## Discussion

### *Suicide mortality in home countries*

Inter-country comparisons in suicide mortality are complicated by varied availability of data and dissimilar temporal endpoints. National data for Jamaica are not recent but indicate very low rates ([http://www.who.int/mental\\_health/prevention/suicide\\_rates](http://www.who.int/mental_health/prevention/suicide_rates)). Although there have been consistently high rates for Irish-born residents in England and Wales, rates in the Irish Republic are reported to be lower than the

Table 1. Trends in suicide death rates<sup>a</sup> per 100,000 in England and Wales by country of birth<sup>b</sup> among those aged 20–69 years.

	1979–1983				1989–1993				1999–2003				Percentage change <sup>c</sup> (3rd vs. 1st period)
	Population	Deaths	Rate	95% CI	Population	Deaths	Rate	95% CI	Population	Deaths	Rate	95% CI	
<b>Males</b>													
England and Wales	64,761,176	12,324	19.2	18.8–19.5	69,174,384	15,186	21.9	21.5–22.2	70,630,464	14,818	21.0	20.6–21.3	9.4
East Africa	368,050	81	20.0	13.7–26.3	506,630	101	19.8	14.7–25.0	563,195	90	<b>15.5</b>	<b>11.9–19.1*</b>	–22.5
India	840,235	150	17.6	14.7–20.5	860,015	200	23.8	20.2–27.4	916,280	145	<b>15.9</b>	<b>13.1–18.6*</b>	–9.7
Pakistan	388,850	40	<b>9.4</b>	<b>6.3–12.5*</b>	470,745	54	<b>11.1</b>	<b>8.0–14.2*</b>	667,605	70	<b>10.3</b>	<b>7.8–12.9*</b>	9.6
Jamaica	384,745	84	22.7	17.6–27.8	313,220	64	26.0	15.7–36.2	260,680	75	<b>51.9</b>	<b>38.3–65.5**</b>	124.7
Northern Ireland	421,560	113	<b>26.5</b>	<b>21.5–31.4**</b>	441,855	150	<b>34.5</b>	<b>29.0–40.1**</b>	435,520	108	25.4	20.5–30.3	–4.2
Republic of Ireland	1,221,700	436	<b>36.1</b>	<b>32.4–39.7**</b>	1,096,750	351	<b>33.4</b>	<b>29.6–37.1**</b>	805,065	271	<b>39.2</b>	<b>33.8–44.7**</b>	8.6
Scotland	1,518,205	471	<b>31.6</b>	<b>28.7–34.5**</b>	1,548,790	506	<b>33.1</b>	<b>30.2–36.1**</b>	1,635,310	473	<b>29.8</b>	<b>27.0–32.6**</b>	–5.7
<b>Females</b>													
England and Wales	66,726,324	7050	10.5	10.2–10.7	70,880,344	4810	6.8	6.6–7.0	71,983,440	4389	6.1	5.9–6.3	–41.9
India	798,285	110	<b>13.9</b>	<b>11.3–16.6**</b>	895,520	95	<b>10.9</b>	<b>8.6–13.2**</b>	982,270	64	6.7	5.0–8.4	–51.8
Republic of Ireland	1,335,685	259	<b>18.7</b>	<b>16.3–21.1**</b>	1,214,535	150	<b>11.4</b>	<b>9.5–13.4**</b>	944,480	112	<b>12.2</b>	<b>9.7–14.8**</b>	–34.8
Scotland	1,422,010	224	<b>16.0</b>	<b>13.9–18.1**</b>	1,447,360	142	<b>10.0</b>	<b>8.3–11.6**</b>	1,547,410	124	<b>8.0</b>	<b>6.6–9.5*</b>	–50.0

<sup>a</sup>Rates are age adjusted to the Europe 2000 population.

<sup>b</sup>Countries of birth were included if definitions of countries were comparable over the three time periods in both the deaths and census data, and if at least 10 deaths were recorded per 10-year age band (i.e. at least 50 deaths in total) in the third time period (1999–2003) and at least one previous time period.

<sup>c</sup>Percentage change = ((rate for 1999–2003 – rate for 1979–1983)/rate for 1979–1983) × 100.

\*And in bold type significantly lower than rate for England and Wales born,  $p < 0.05$ ; \*\*And in bold type significantly higher than rate for England and Wales born,  $p < 0.05$ .

England and Wales average, with a downward trend since 2000 (Department for Health and Children 2010). By contrast, high rates among Scotland-born men and women are consistent with high levels in Scotland (Platt *et al.* 2007) and declining rates mirror recent small declines in the home country among those born in Northern Ireland (Brock, *et al.* 2006). In the absence of official national statistics on suicide in Pakistan, recent estimates suggest very low rates for both men and women (Khan *et al.* 2008). National data in India indicate a trend of declining rates between 1999 and 2009 but higher rates in the rural South compared to the North of India (National Crime Records Bureau 2009). The difficulties in enumerating death rates from suicide in Pakistan and India (such as poor denominator data, varying standards in death certification, stigma and legal repercussions (Khan *et al.* 2008)), as elsewhere in low- and middle-income countries, means that suicide and self-harm are likely to be under-enumerated in these countries. Rates in home countries, therefore, go some way to explaining the relatively low risk among Pakistani men and women, previous higher mortality among Indian women and higher risk among Scotland-born men, but do not illuminate suicide mortality inequalities for men born in Jamaica or the Irish Republic.

### **Risk factors**

The nature of the dataset (aggregated data to protect confidentiality) precludes formal exploration of putative risk factors. However, it is useful to allude, in brief, to the main risk factors (self-harm, poor mental health, socio-economic and socio-cultural factors) in attempting to understand trends. There is some evidence that individuals from some ethnic groups are less likely to receive medical attention after an episode of self harm (Crawford *et al.* 2005). Limited evidence suggests higher risk of non-fatal self-harm among South Asian women and increasing rates among some Black Caribbean groups which may signal changes in ethnic patterns in suicide risk (Bhui *et al.* 2007). Excess risk of attempted suicide and serious mental ill-health among Caribbean origin males in the USA (Joe *et al.* 2006, Williams *et al.* 2007) and of suicide among UK Black Caribbeans within 12 months of contact with mental health services, associated with more psychotic symptoms (Bhui and McKenzie 2008), may indicate the importance of exploring poor mental health and suicide in men of the Caribbean diaspora in various locales, in order to identify causal mechanisms.

Structural explanations for high mortality of Irish migrants, for example, have centred on the ease of migration to England and Wales, perhaps encouraging the less healthy to migrate (Marmot *et al.* 1984); entrenched economic (and cultural) differences in life chances have also been suggested (Williams 1994). Adjustment of suicide mortality ratios for occupational social class in other studies explains very little of the higher risk among Irish migrants, although greater risk has been reported for unmarried persons (Maxwell and Harding 1998). Similarly a significantly higher proportion of suicides has been reported among South Asian women in social class I than in the same social class groups in the general population (Raleigh *et al.* 1990). Standard risk factors for suicide may not act in the same way across ethnic groups.

Culture-specific precipitating factors (parental/marital conflict; stress and isolation; pressure to conform to traditional expectations) have been strongly favoured in explaining previously reported high risk of suicide among South Asian women

(Raleigh *et al.* 1990, Raleigh 1996). Investigation of more recent suicide mortality data (1993–2003) for aggregated South Asian groups, identified using surname analysis, indicated marginally higher rates for older women but lower rates for younger women compared to those for England and Wales (McKenzie *et al.* 2008). There has perhaps been a reduction in the impact of sociocultural factors on suicide, at least among some age groups, possibly indicating effective intervention strategies.

### **Study limitations**

A key limitation of the study is that trends in suicide at younger ages and at older ages were not examined, as reliable interpretation is hampered due to the small number of suicides recorded and poor quality of denominator data, respectively (Shah *et al.* 2011). Another limitation is that although there are significant ageing migrant populations in England and Wales, at the 2001 Census 34–60% of the main ethnic minority groups were born in the UK (Dobbs *et al.* 2006), with the highest proportion among Black Caribbeans. Using country of birth proxies for ethnicity means important trends among second and subsequent generation migrants may therefore be missed. Alternatives to using country of birth in the absence of ethnic group identifiers, such as surname analysis for those groups (mainly South Asian) whose names are distinctive (McKenzie *et al.* 2008), are useful approaches. Surname analysis cannot disaggregate populations according to place of origin, however, and as exogamy increases additional methods will need to be developed. The potential of including ethnicity in death registration has been reviewed in a public consultation ([http://www.statistics.gov.uk/downloads/registration/00RegnPrelims\\_v1.pdf](http://www.statistics.gov.uk/downloads/registration/00RegnPrelims_v1.pdf)) and a number of difficulties in implementation identified; alternative approaches have been suggested (e.g. through data linkage (Raleigh 2009)) and may in the future be promising avenues to improving the monitoring of suicide (and other causes of death) by ethnic group. A further limitation is that although cohort effects were not examined we cannot rule out the possibility that declining rates for most groups are associated with more selective migration from some commonwealth countries since the 1970s (i.e., more skilled, better educated migrants). Changes in the composition of migrants do not, however, explain the increase in suicide among men born in Jamaica, as there has been virtually no migration from Jamaica in recent decades. Finally, as the study is based on cross-sectional data, we acknowledge the possibility of numerator-denominator bias (Harding and Balarajan 2002). With the scarcity of suitable longitudinal data, this will continue to be a methodological issue that is difficult to resolve (Harding and Balarajan 2002).

### **Conclusion**

Despite declining trends for most migrant groups, and for England and Wales-born women, adverse trends in death rates for some country of birth groups suggest that further targeting of suicide prevention initiatives may be required.

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