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***Ethnicity and Health* 2015, 20(4), 341-353**

Ethnicity & Health
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/ceth20

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Published online: 04 Jun 2014.

To cite this article: Pia Wohland, Phil Rees, James Nazroo & Carol Jagger (2014): Inequalities in healthy life expectancy between ethnic groups in England and Wales in 2001, Ethnicity & Health, DOI: 10.1080/13557858.2014.921892

To link to this article: http://dx.doi.org/10.1080/13557858.2014.921892

Ethnicity & Health, 2014
http://dx.doi.org/10.1080/13557858.2014.921892

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Inequalities in healthy life expectancy between ethnic groups in England and Wales in 2001

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(*Received 19 June 2013; accepted 18 April 2014*)

Objectives. We aim to develop robust estimates of disability-free life expectancy (DFLE) and healthy life expectancy (HLE) for ethnic groups in England and Wales in 2001 and to examine observed variations across ethnic groups.
Design. DFLE and HLE by age and gender for five-year age groups were computed for 16 ethnic groups by combining the 2001 Census data on ethnicity, self-reported limiting long-term illness and self-rated health using mortality by ethnic group estimated by two methods: the Standardised Illness Ratio (SIR) method and the Geographically Weighted Method (GWM).
Results. The SIR and GWM methods differed somewhat in their estimates of life expectancy (LE) at birth but produced very similar estimates of DFLE and HLE by ethnic group. For the more conservative method (GWM), the range in DFLE at birth was 10.5 years for men and 11.9 years for women, double that in LE. DFLE at birth was highest for Chinese men (64.7 years, 95% CI 64.0–65.3) and women (67.0 years, 95% CI 66.4–67.6). Over half of the ethnic minority groups (men: 10; women: 9) had significantly lower DFLE at birth than White British men (61.7 years, 95% CI 61.7–61.7) or women (64.1 years, 95% CI 64.1–64.2), mostly the Black, Asian and mixed ethnic groups. The lowest DFLE observed was for Bangladeshi men (54.3 years, 95% CI 53.7–54.8) and Pakistani women (55.1 years, 95% CI 54.8–55.4). Notable were Indian women whose LE was similar to White British women but who had 4.3 years less disability-free (95% CI 4.0–4.6).
Conclusions. Inequalities in DFLE between ethnic groups are large and exceed those in LE. Moreover, certain ethnic groups have a larger burden of disability that does not seem to be associated with shorter LE. With the increasing population of the non-White British community, it is essential to be able to identify the ethnic groups at higher risk of disability, in order to target appropriate interventions.

Keywords: disability-free life expectancy; healthy life expectancy; inequality; ethnic groups; England and Wales

Introduction

The UK population is not only ageing, as are countries worldwide, but also its composition is subtly changing. From 1991 to 2011 the non-White population in England and Wales has almost doubled in size to almost 8 million or 14% of the population (Jivraj 2012). Additionally ethnic groups who migrated 40 years ago as young adults are now

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forming a growing proportion of the older population. Some groups, specifically Indian and Black Caribbean older adults in West London, have recently been shown to have higher rates of both prevalent and incident disability (Williams et al. 2012).

Declines in cardiovascular mortality have contributed greatly to the increase in life expectancy (LE) over the past decades. This may explain the higher disability rates in some ethnic groups since cardiovascular disease, as well as diabetes and coronary heart disease, is disabling as well as fatal (Jagger et al. 2007) and particular ethnic groups, for example Indians, Pakistanis and Bangladeshis, are more susceptible to these conditions (Zaman and Bhopal 2013; Barnett et al. 2006).

Health expectancies, which measure the average number of remaining years spent healthy, are a natural extension to LE and have become one of the main tools for monitoring inequalities in health (Salomon et al. 2012). The Office for National Statistics regularly reports on disability-free life expectancy (DFLE), based on limiting long-term illness (LLTI), and healthy life expectancy (HLE; based on self-rated health) for the UK overall, by smaller geographies and by deprivation. Although ethnicity was found to be a contributory factor in explaining the variation in DFLE at birth across local authorities (LAs) in 1991 (Bone et al. 1995), estimates of DFLE and HLE by ethnic group have been impossible up to now due to the lack of mortality data for specific ethnic groups, since ethnicity is not recorded on the death certificate (Bhopal 2012). Immigrant mortality in England and Wales has been monitored since the 1971 Census with pronounced differences in mortality between first-generation migrant groups (Wild et al. 2007). With an ageing population, using mortality as an indicator of population health may no longer be sufficient for monitoring and planning purposes (Mitchell 2005) and we therefore present the first estimates of DFLE and HLE for ethnic groups in England and Wales.

Two alternative mortality estimates by ethnic group have recently been produced as part of ethnic population projections for the UK local areas (Rees, Wohland, and Norman 2009; Rees and Wohland 2008). However, the mortality estimates used in the projections rely on ethnic group health information, which might compromise their use in DFLE calculations by incorporating the same health information twice. We tested for this effect by using the preferred mortality estimates alongside another one which is based on the geographical distribution of the ethnic population only (Rees, Wohland, and Norman 2009). As well as estimating the extent to which LE, DFLE and HLE for each ethnic group differ using each mortality estimation method, we also provide the first estimates of DFLE and HLE at birth by ethnic group for England and Wales.

Methods

DFLE and HLE, by five-year age groups, gender and ethnicity, were calculated using the commonly used Sullivan method (Sullivan 1971; Jagger 1997). The Sullivan method is a straightforward method to calculate period health expectancies by dividing LE at each age into LE with and without the health state of interest. Generally, the method has minor data requirements, needing only the age and sex-specific prevalence of the health state of interest from a cross-sectional study and a period life table for the same time as the study. In the case of ethnic groups in England and Wales, prevalence of not good health and LLTI were derived from the 2001 Census (Census Questions 11 and 13) and by gender and five-year age group for each ethnic group as defined by the 2001 Census ethnic

classification from commissioned tables (Office for National Statistics 2004). Classification of ethnic group in the 2001 Census is through self-identification with a choice from 16 options (Office for National Statistics 2001a, 2001b).

In the absence of comprehensive direct mortality data for ethnic groups in England and Wales from which to calculate life tables, we used two different mortality estimates for ethnic groups developed by Rees, Wohland, and Norman (2009) for the use in ethnic population projections for the UK local areas. Thus we made two estimates of DFLE and HLE at birth, using each of the mortality estimates, for comparison and analysis. Both mortality estimation methods and results have already been described and compared in detail (Rees and Wohland 2008; Rees, Wohland, and Norman 2009). Here, we briefly summarise the most important points of each method. A short summary of each method can also be found in the supplementary section (Box 1[1]). The first estimation method, called the Standardised Illness Ratio (SIR) method, used the relationship of standardised mortality ratios (SMRs) and SIRs of the UK LAs, all-group population and sex, to estimate SMRs for the 16 ethnic groups from their SIRs, under the assumption that the all-group relationship applied to each individual ethnic group. The ratio of estimated ethnic SMRs to all-group SMRs for LAs was used to estimate ethnic age-specific mortality rates for each sex. The second mortality estimation method, called the Geographically Weighted Method (GWM), takes the geographical distributions of ethnic groups as measured in the 2001 Census and local area mortality rates to produce a weighted national average for ethnic mortality rates. Rees, Wohland, and Norman (2009) considered the results of the SIR method as more realistic and applied it in their population projections. However, if this method is used to calculate health expectancies, then the health information is used in both the mortality and the prevalence of ill health and therefore could possibly amplify the estimates. For calculating DFLE and HLE, we calculated abridged life tables from both mortality estimates, closing the life table at age 75+, to stabilise the estimates of the prevalence of health at older ages due to small numbers. For that reason, the life expectancies calculated here are slightly higher than those published originally, which were single year of age data with age 100+ as last age.

Significance tests of differences in DFLE (and HLE) between minority ethnic groups and the majority White British group were based on critical *z* values, explained in detail in Jagger (1997), with the standard error incorporating uncertainty with regard to both mortality and health status prevalence rates.

Results

Before comparing and analysing DFLE (and HLE) at birth by ethnic group, we compare LE at birth from the two mortality estimation methods. LE by the two methods (GWM and SIR) is positively and significantly correlated but more closely for women (Pearson's correlation coefficient = 0.8) than men (Pearson's correlation coefficient = 0.6). Looking at the differences in LE at birth between the two methods (SIR–GWM), the Chinese group shows the largest discrepancy with 3.9 years (men) and 2.7 years (women) whilst for the White British group, the two methods lead to the same LE. Estimations of the gaps in LE at birth between ethnic groups using both methods suggest that the SIR method produces a slightly larger range between ethnic groups (men: 6.1 years; women: 7.2 years) compared to the GWM method (men: 3.8 years; women: 3.6 years). Bangladeshi men had in both methods the lowest LE 73.3 years (GWM) and 73.2 years (SIR). For

women, the Pakistani group had the lowest LE in both methods, but estimates differed by about 2 years, GWM: 79.3 years; SIR: 77.1 years. In contrast, there was a greater difference between the two methods in the maximum LE (men: 2.2 years; women: 1.4 years) and in the ethnic group who had the highest LE (GWM: Other White; SIR: Chinese; Table 1).

Disability-free life expectancy at birth

DFLE and HLE at birth varied considerably between ethnic groups by both methods (Table 1 for DFLE and Supplementary Table 1[1] for HLE). DFLE and HLE have similar directional trends and correlate strongly with each other for each mortality assumption. For that reason, we primarily focus on DFLE results and supply HLE results in supplementary material (online).

The variation across ethnic groups in DFLE at birth was considerably larger than the ones found in LE using both mortality estimation methods. However, for each ethnic group, the differences between the two methods in DFLE (Table 1) are less than the differences in LE (Table 1). Moreover, the overall ranks in DFLE across ethnic groups are very similar between methods (Supplementary Table 2[1]), varying by one rank at most and producing identical rankings for 8 ethnic groups (men) and 12 groups (women). On the other hand, the range in DFLE at birth across ethnic groups is around two years larger for the SIR method (men: 12.7 years; women: 13.9 years) than for the GWM method (men: 10.5 years; women: 11.9 years). For the more detailed analysis of DFLE and LE at birth between ethnic groups, we therefore concentrate on estimates produced by the GWM method, since this produces the most conservative estimates.

DFLE at birth was highest for Chinese men and women (men: 64.7 years; women: 67.0 years) and this group also had the highest proportion of remaining life spent free of disability (men: 85.8%; women: 82%). Compared to the White British population, DFLE at birth was 3 years (95% CI 2–3.82) higher for Chinese men and 2.8 years (95% CI 2.1–3.6) higher for Chinese women (Figures 1 and 2). Other ethnic groups with significantly higher DFLE at birth compared to the White British group were: Other White men and women, Black African men and men and women in the Other ethnic group category (Figures 1 and 2).

Several groups (White and Black Caribbean, Bangladeshi, Pakistani and Other Black) had similarly low LE at birth, but DFLE at birth for both men and women was lowest in the Pakistani (men: 55.7 years; women: 55.1 years) and Bangladeshi populations (men: 54.3 years; women: 56.5 years; Table 1). When compared to the White British population, DFLE at birth was 6.0 years (95% CI 5.6–6.4) less for Pakistani men, 9.1 years (95% CI 8.7–9.4) less for Pakistani women, 7.5 years (95% CI 6.8–8.1) less for Bangladeshi men and 7.6 years (95% CI 6.8–8.5) less for Bangladeshi women, and significantly lower for men and women from the White and Black Caribbean, Black Caribbean, Other Mixed, Indian, Other Asian and Other Black communities.

With regard to gender differences, LE was higher in women than men in all ethnic groups. For most ethnic groups, this was also the case for absolute years of DFLE although when DFLE is expressed as a proportion of LE, women have a smaller proportion of remaining years disability-free than men. Exceptions to this rule were the Indian and Pakistani population, where women had a lower absolute DFLE at birth compared to men and Black African men and women where DFLE was almost identical.

Table 1. LE and DFLE at birth by ethnic group in England and Wales in 2001 for men and women calculated with the GWM and the SIR method.

	LE at birth 2001						DFLE at birth 2001									
	Men			Women			Men					Women				
Ethnic group	GWM	SIR	Difference SIR – GWM	GWM	SIR	Difference SIR – GWM	GWM	%[a]	SIR	%[a]	Difference SIR – GWM	GWM	%[a]	SIR	%[a]	Difference SIR – GWM
White British	76.4	76.4	0.0	80.8	80.8	0.0	61.7	80.8	61.7	80.8	0.0	64.1	79.4	64.2	79.4	0.0
White Irish	76.0	75.6	−0.5	82.2	82.0	−0.2	60.2	79.2	60.0	79.4	−0.2	64.6	78.6	64.5	78.7	−0.1
White Other	77.1	78.1	0.9	82.9	83.3	0.4	63.8	82.7	64.3	82.3	0.5	66.1	79.8	66.3	79.6	0.2
White and Black Caribbean	75.1	73.5	−1.6	79.6	77.9	−1.7	58.5	77.9	57.7	78.4	−0.8	60.4	75.9	59.7	76.6	−0.7
White and Black African	74.3	73.8	−0.5	81.5	80.3	−1.2	58.3	78.5	58.0	78.7	−0.3	61.9	76.0	61.4	76.5	−0.5
White and Asian	76.6	75.8	−0.8	81.8	80.9	−0.9	61.5	80.2	61.0	80.5	−0.4	63.9	78.1	63.5	78.5	−0.4
Other Mixed	75.8	74.8	−1.0	81.4	80.5	−0.9	59.9	79.0	59.3	79.3	−0.6	63.4	77.9	63.0	78.2	−0.4
Indian	76.0	76.3	0.2	82.6	81.0	−1.6	60.7	79.9	60.9	79.8	0.1	59.8	72.5	59.4	73.3	−0.5
Pakistani	74.2	73.7	−0.6	79.3	77.1	−2.2	55.7	75.1	55.5	75.3	−0.2	**55.1**	**69.5**	**54.3**	**70.4**	−0.8
Bangladeshi	73.3	73.2	−0.1	80.1	78.3	−1.7	**54.3**	**74.0**	**54.2**	**74.0**	−0.1	56.5	70.6	55.7	71.2	−0.8
Other Asians	76.3	75.9	−0.5	82.8	80.9	−1.8	60.9	79.8	60.7	80.0	−0.2	61.7	74.5	61.0	75.4	−0.7
Black Caribbean	75.0	75.3	0.4	82.7	81.4	−1.3	59.2	78.9	59.4	78.9	0.3	60.5	73.2	60.2	74.0	−0.4
Black African	74.6	77.2	2.6	81.3	81.8	0.4	62.1	83.2	63.5	82.3	1.5	63.2	77.7	63.4	77.6	0.2
Other Black	74.8	73.7	−1.1	79.9	78.4	−1.6	58.8	78.6	58.3	79.0	−0.5	60.2	75.3	59.5	75.9	−0.7
Chinese	75.4	79.4	3.9	81.6	84.3	2.7	**64.7**	**85.8**	**66.9**	**84.2**	2.1	**67.0**	**82.0**	**68.2**	**80.9**	1.2
Other	76.2	76.9	0.8	83.0	83.8	0.8	62.5	82.1	62.9	81.8	0.4	66.0	79.5	66.4	79.2	0.4
All	76.4	76.4	0.0	80.8	80.7	0.0	61.7	80.7	61.6	80.7	0.0	64.0	79.2	64.0	79.3	0.0

Table 1 (*Continued*)

	LE at birth 2001						DFLE at birth 2001								
	Men		Difference	Women		Difference	Men				Difference	Women			Difference
Ethnic group	GWM	SIR	SIR – GWM	GWM	SIR	SIR – GWM	GWM	%[a]	SIR	%[a]	SIR – GWM	GWM	%[a]	SIR	%[a]	SIR – GWM
Minimum	73.3	73.2	−1.6	79.3	77.1	−2.2	54.3	74.0	54.2	74.0	−0.8	55.1	69.5	54.3	70.4	−0.8
Maximum	77.1	79.4	3.9	83.0	84.3	2.7	64.7	85.8	66.9	84.2	2.1	67.0	82.0	68.2	80.9	1.2
Range	3.8	6.1	5.5	3.7	7.2	4.9	10.5	11.7	12.7	10.3	3.0	11.9	12.6	13.9	10.5	2.0

Note: [a]Percent of life expectancy spent disability-free. Bold highlights lowest and higher DFLE at birth.

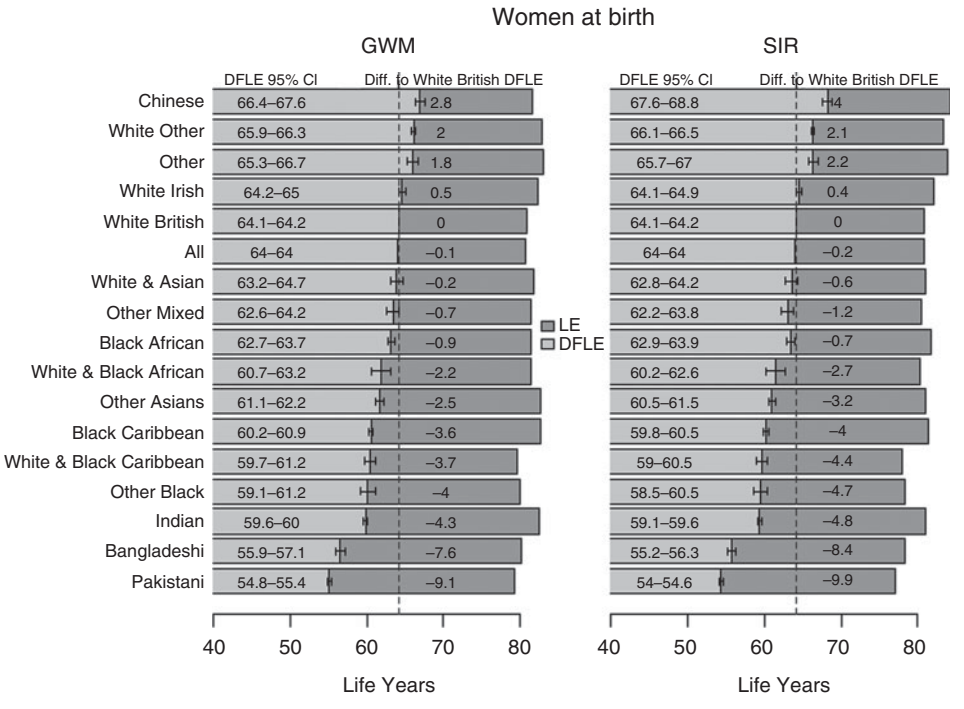

Figure 1. Women's LE and DFLE at birth by ethnic group in England and Wales in 2001, using the GWM or SIR mortality estimates, ordered by GWM-DFLE values.
Note: Vertical line denotes White British DFLE at birth.

Indeed, Indian women had similar LE to White British women but their DFLE was 4.3 years less (95% CI 4.0–4.6). Patterns between ethnic groups for HLE at birth are similar to those for DFLE (Supplementary Figures 1 and 2[1]).

Discussion

We calculated health expectancies at birth for ethnic groups in England and Wales, and, in the absence of actual mortality data, we used two different indirect methods (SIR and GWM) to estimate mortality for the health expectancies. The range of LE between ethnic groups was larger for the SIR method which included health information than for the GWM method which did not, and appeared to be mainly due to differences between the methods at the highest LE rather than the lowest LE. DFLE rankings by the two methods were more similar and absolute differences were smaller than those for LE. For comparison of ethnic groups, we concentrated on the more conservative GWM estimates.

We found substantial differences in DFLE at birth in 2001 between ethnic groups in England and Wales which were around twice as large as variations in LE at birth for the same groups. Chinese men and women consistently had the highest DFLE at birth and Bangladeshi men and Pakistani women had the lowest, with differences between these groups of 10.5 years free of disability for men and 11.9 years for women. Especially unanticipated were results for Indian women, who had a similar LE at birth compared to the White British group, but more than four years fewer free of disability. As is generally

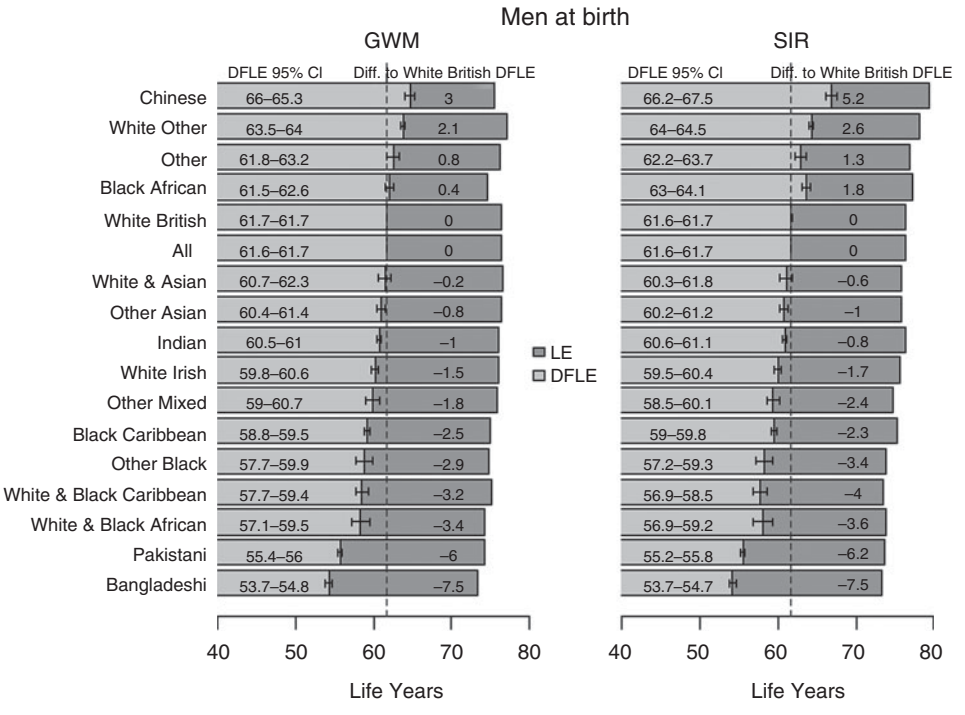

Figure 2. Men's LE and DFLE at birth by ethnic group in England and Wales in 2001, using the GWM or SIR mortality estimates, ordered by GWM-DFLE values.
Note: Vertical line denotes White British DFLE at birth.

found, for most ethnic groups, women's DFLE exceeded that of men in absolute years though this represents a smaller proportion of LE for women than men, suggesting that not all women's extra years are free of disability. Notable exceptions to this were the Indian, Pakistani and Black African groups where women's absolute years of DFLE were the same or less than those of men. Women in these ethnic groups thus spend even more years with disability than their male counterparts. These conclusions held whether mortality by ethnic group was calculated based on GWM or association with SIRs method.

HLE and DFLE are broad population indicators and are regularly reported for England and Wales overall as well as by region, LA, social class or area deprivation. Here, we provide the first estimates of DFLE and HLE for ethnic groups since life tables by ethnic group are not routinely available in England and Wales. Alternative estimates of ethnic group mortality have been made using the Longitudinal Study of England and Wales (LS) linking ethnic group sample members to their subsequent mortality (Harding 2003; Harding and Balarajan 2000, 2001) but small sample sizes (1.1% of the population) mean only the largest groups can be analysed and even here sample sizes are close to the lower limit for generating life tables. In addition, high attrition rates (reaching 25% for the Black Caribbean group) make many ethnic group estimates unreliable. Other estimates of mortality by ethnic group have also been prepared from country of birth information collected on death certificates (Harding and Balarajan 2002), although these apply only to the first generation of immigrants whilst the ethnic classification we used is appropriate

for all generations. A recent study (Scott and Timaeus 2013) also used the LS to estimate mortality differentials by ethnic groups in England and Wales. The results are not directly comparable to estimation methods used in this study and could not reliably inform our results for a number of reasons. Firstly, the Scott and Timaeus study comprises only people already present in 1991, aged 0–79, omitting the large number of migrants who entered between 1991 and 2001. In contrast, our estimation methods are based on the 2001 population. Secondly, as previously mentioned, the LS includes only a very small Black and Minority Ethnic group sample with high attrition rates for many minority ethnic groups. Wild et al. (2007) also analyse mortality for the 2001 population but by country of birth. Even though this confines analysis to first-generation migrants, some of the findings are parallel to those of Rees, Wohland, and Norman (2009), that is the highest SMRs are found in the Pakistani and Bangladeshi community and the lowest in the Chinese group.

Our study has a number of limitations. Firstly, as mortality data by ethnic group are not collected on the death certificate in England and Wales, we had to find other ways to estimate ethnic group mortality and used two methods to do this: one employing health information (SIR method) and the other based solely on the geographical distribution of the ethnic populations (GWM). Although the SIR method had previously been the preferred one for ethnic population projections (Rees, Wohland, and Norman 2013), the differences in LE between ethnic groups were somewhat larger than by the GWM method. In future, it is hoped that England and Wales may follow the example of Scotland and collect ethnic information on the death certificate (Christie 2012) to allow direct measurement of ethnic mortality. A further limitation is the use of self-reported health which might be problematic when comparing ethnic groups, as the questions might be understood differently and there may be differential reporting by ethnic group (Romieu and Robine 1994). Mitchell (2005) reports on the different relationships between LLTI and SMR in the UK home countries, suggesting some variation on reporting health across the UK and these findings were confirmed by Rees and Wohland (2008). However, the self-reported health measure underlying HLE has been shown to correlate with other health measures similarly across several ethnic groups in the UK (Nazroo 1997, 2001). The lower DFLEs in Pakistani and Indian women compared to their male counterparts are the result of women reporting considerably more LLTI compared to men, this difference in reporting being much greater compared to other ethnic groups (Office for National Statistics 2005). Wild et al. (2007) found higher all-cause SMR for women born in India or Pakistan compared to their male counterparts, suggesting a real gender difference in health in first-generation migrants. Also having two questions on health allowed us to calculate both DFLE and HLE, which should make the results more robust and indeed there was little difference in ethnic group patterns and differences in DFLE and HLE. Finally, Sullivan-type health expectancies use the observed prevalence of disability/health to approximate the true period conditions, a reasonable approximation provided that disability or self-rated health is stable over time or evolves regularly (Mathers and Robine 1997). Research on intergenerational differences in health in ethnic minorities suggests that current inequalities between groups will remain, at least in the short term, despite improvements in socio-economic position (SEP) for second-generation ethnic minorities (Smith, Kelly, and Nazroo 2009).

How do we explain the differences in DFLE in 2001 between the ethnic groups? The main factors that are likely to account for the differences are SEP of group members,

length of time since immigration and reasons for immigration. Groups with higher SEP are likely to have higher DFLE; ethnic groups which contain many recent immigrants are likely to benefit from the 'healthy migrant' effect, whereas those who have entered the UK because of crises in their country of origin (refugees, asylum seekers) are more likely to have poorer health. Both ethnicity and SEP, measured by social class, were significant contributory factors to the variation in DFLE at birth between LAs in England and Wales in 1991 (Bone 1995). SEP is an important contributor to ethnic health inequalities. In the USA, 90% of the difference in disability rates between Black and White men and 75% of difference in women were explained by income and education (Fuller-Thomson et al. 2009). In the UK, the contribution of SEP to explaining ethnic health inequalities is important (Nazroo 2001, 2003; Becares et al. 2012), although some studies have suggested that this differs by ethnic group (Williams et al. 2012). For example, adjusting for SEP widened differences in incident and prevalent disability between older people of European and Indian Asian origin in West London, but attenuated differences between European and African Caribbean people (Williams et al. 2012). Moreover, individual-level measures of SEP appear to be more influential than area-based measures (Karlsen, Nazroo, and Stephenson 2002). Health inequalities in the UK have been linked to social class and socio-economic factors for many years (Black, Townsend, and Davidson 1980; Marmot 2010). DFLE and HLE by area deprivation and social class have been produced for the same time period as our study (Smith, Olatunde, and White 2010; White and Edgar 2010). DFLE inequalities at birth by area deprivation (13.4 years for men and 11.1 years for women) are similar to those by social class (13.2 years for men and 10.6 years for women) but, for women, are smaller by almost three years to those we found across ethnic groups with the SIR method. Thus, SEP might not fully explain inequalities in DFLE at birth by ethnic group.

Underlying these substantial inequalities in DFLE between ethnic groups will be differences in chronic disabling conditions, such as cardiovascular disease, diabetes and coronary heart disease, and perhaps poorer access or treatment of such conditions thereby leading to earlier onset or faster progression of disability. Different ethnic groups, notably the Indian, Pakistani and Bangladeshi populations, have higher prevalence of such conditions, which would explain our findings of lower DFLE in these groups. However, risk factor profiles (smoking, hypertension, obesity and lipid levels) are not uniformly high among the groups (Bhopal et al. 1999; Nazroo 2001), notable is the high smoking prevalence of Bangladeshi men compared to other groups and low physical activity, especially low rigorous activity compared to the general population especially in Asian-Indian, Pakistani and Bangladeshi and but also to some extent Chinese women (DH 2001). SEP explains much of the higher risk in Bangladeshi and Pakistani individuals (Nazroo 2001) but not necessarily for the Indian group (Williams et al. 2012). Other factors, racial harassment and discrimination, have also been identified as contributors to ill health (Nazroo 2003). Other possible influences, such as early life course experience or physiological differences (Williams et al. 2012), need further research. With regard to treatment and access to care, there is little evidence that these are worse for ethnic minority groups than for White British and may even be better (Zaman and Bhopal 2013; Nazroo et al. 2009).

Conclusion

DFLE at birth calculated using two different mortality estimates correspond well to each other. This makes us confident that these health expectancies are robust. Substantial inequalities in DFLE at birth have been observed between ethnic groups in England and Wales, a conservative estimate being 10.5 years for men and 11.9 years for women, around double the inequalities in LE at birth between the same groups. Chinese men and women had the longest DFLE, with DFLE for Chinese men being between 3 years (GWM) and 5.2 years (SIR) more and Chinese women between 2.8 years (GWM) and 4.0 years (SIR) more than their White British counterparts. A majority of the ethnic groups (men: 10; women: 9, GWM and SIR) had significantly lower DFLE and HLE than the White British with Bangladeshi men and Pakistani women experiencing the fewest years free of disability. Our results also emphasise the importance of detailed ethnic group information. Greater socio-economic disadvantage in some ethnic groups is unlikely to explain all of the DFLE inequalities, at least for women. Further research is needed to investigate health expectancy variations at different ages between ethnic groups to identify when in the life course inequality between groups has its onset.

Note

1. Supplementary Content may be viewed online at http://dx.doi.org/10.1080/13557858.2014.921892.

Key messages

(1) This study reports the first estimates of health expectancies by ethnic groups in England and Wales.
(2) Health expectancy variations, using different mortality estimates, identify similar variations and inequalities across ethnic groups.
(3) Inequalities in health expectancy at birth between ethnic groups are almost double those in life expectancy.

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