

## Ethnicity has overtaken race in medical science: MEDLINE-based comparison of trends in the USA and the rest of the world, 1965–2005

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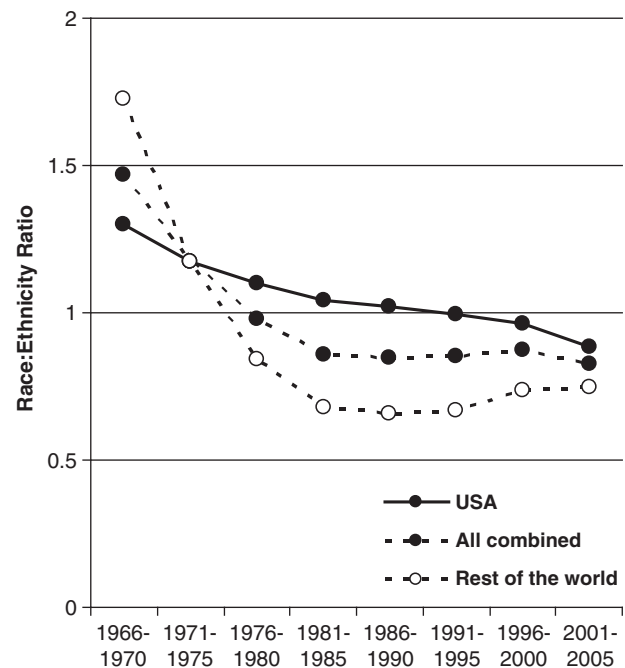
Ethnicity and race are among the most commonly used epidemiological variables, closely following age, sex and social class. Relative increase in the use of the term 'ethnicity' rather than 'race' in the health literature from 1966 to 2000 has been observed.<sup>1–3</sup> These terms describe two distinct, overlapping concepts and, arguably, ethnicity is preferable to race.<sup>4,5</sup> There are limited genetic differences between racial groups, undermining the traditional use of race as an indicator of biological difference between populations. The broader concept of ethnicity emphasizing cultural differences helps to determine aetiology, tackle inequalities, assess need, make public health plans and direct resource allocation.<sup>1,5,6</sup> In Europe, race has been largely superseded by ethnicity.

Since Afshari and Bhopal's 2002 article,<sup>2</sup> the compound terms race/ethnicity or race-ethnicity have emerged, particularly in North America. The significance of this is unclear but it may herald a switch from race to ethnicity there, as in Europe. This article presents an update of our earlier work and tests a prediction implied there—that ethnicity would continue its comparatively rapid growth. It also separates North America and the rest of the world.

We used the methods already reported.<sup>2</sup> In January 2008, PUBMED/MEDLINE-listed articles for 2001–05 were studied and searched in all fields, publication types and languages.<sup>7</sup> We counted the number of appearances of Ethnic groups, Ethnicity, Race, Racial stocks, Racism and Prejudice. Some variables relevant to ethnicity and race (heart, depression, social and income) were also selected as a reference to the general growth in publications—findings available on request to the authors. Based on publication dates, findings were categorized in 5-year periods.

Previously, the number of articles in each category in 1995–2000 was divided by the number in 1966–70 to yield a publication growth ratio. For the updated search, the number of articles during 2001–05 were used divided by the number of articles during 1966–70 (based on the new search, yielding different numbers for earlier years for reasons briefly mentioned below and discussed in a full report available from the authors). We examined race/ethnicity and race-ethnicity for the first time. Finally, data for the USA and the rest of the world were separated (combined data are available in the full report). The ratio of articles on race in relation to ethnicity was

calculated to assess the difference in the USA and the rest of the world (Figure 1). Table 1 shows that the number of appearances of Ethnic groups, Ethnicity, Race and Racial stocks were still considerably higher than Racism and Prejudice, but the difference reduced over time (in relative terms). For the four reference search terms (Heart, Depression, Social and Income) the growth ratios ranged from 3.0 to 13.1, which is similar to our 2002 report. Assuming this range as the background pattern, articles on race-ethnicity, race/ethnicity, racism (Europe) and prejudice (Europe) increased relatively fast. Ethnicity grew faster than race and racial stocks. Race/ethnicity and race-ethnicity were virtually unused until 1986, when race-ethnicity began its rapid growth, with race/ethnicity following 10 years later. Table 1 shows that ethnicity overtook race in 1991–95 in the USA. The same switch occurred in the rest of the world in 1976–80. Their ratios are shown in Figure 1.



**Figure 1** The ratio of use of the terms race:ethnicity in the USA, the rest of the world and all combined (1966–05)—MEDLINE/PUBMED, search January, 2008

**Table 1** Number of retrievals over a 5-year period of ethnicity-related words and phrases in the USA in comparison with the rest of the world, with the ratio of the number in 2001–05 and 1966–70

Search terms	1966–70	1971–75	1976–80	1981–85	1986–90	1991–95	1996–2000	2001–05	Ratio 2001–05: 1966–70
<b>Data for USA only</b>									
Ethnic groups	2311	3080	2762	3199	4340	6953	9636	14 329	6.2
Ethnicity	2475	3321	3404	3976	5922	9931	14 257	22 227	9.0
Race	3217	3895	3749	4140	6062	9899	13 728	19 679	6.1
Racism	218	356	443	383	1155	1817	2267	2611	12.0
Prejudice	212	347	431	373	1136	1782	2215	2544	12.0
Racial stocks	3064	3720	3185	3285	4672	7484	10 054	14 550	4.7
Race–ethnicity	0	0	3	5	28	158	405	1065	Infinite
Race/ethnicity	0	0	0	0	0	0	39	405	Infinite
<b>Data for rest of the world (excluding USA)</b>									
Ethnic groups	1473	2215	2030	2814	2931	3956	4934	6843	4.6
Ethnicity	1598	2548	3103	4136	5372	7687	9661	15 197	9.5
Race	2759	2987	2615	2817	3521	5156	7142	11 339	4.1
Racism	66	84	218	206	459	1031	1547	2281	34.6
Prejudice	66	83	212	200	443	1005	1520	2238	33.0
Racial stocks	2661	2827	2318	2370	2757	4077	5231	8291	3.1
Race–ethnicity	0	0	0	0	3	11	77	228	Infinite
Race/ethnicity	3	1	1	0	1	3	11	273	91

Our work shows a continuing vigorous growth in these variables in medical research as reflected by MEDLINE/PUBMED. This analysis, consistent with previous reports,<sup>2,3</sup> re-emphasizes the rapid growth of the term ethnicity (and ethnic groups) compared with race (and racial stocks), although the difference is narrower in this compared with our earlier analysis. We also note a relatively rapid growth of work on racism and prejudice.

The update produced in the new analysis in 2008 compared with 2002 report revealed a surprisingly large increase in retrievable articles on ethnicity in 1966–70 and earlier periods. Dialogue with the National Library of Congress indicated that this was probably due to changes in the search engine, which undergoes constant modification.<sup>8</sup> This interpretation is supported by comparing our findings with the work in the early 1990s of Sheldon and Parker,<sup>3</sup> also using MEDLINE searches in the period 1985–90, but restricted to titles and abstracts. In this period, race dwarfed ethnicity e.g. between 1986 and 1990 there were 12.8 articles on race for every one on ethnicity (396/5063). For the same period in our previous analysis,<sup>2</sup> we found near equivalence for these two terms and in this update ethnicity slightly exceeds race (1.18:1). MEDLINE databases are dynamic and changes are made to the search engines to reflect current needs.

Ethnicity overtook race in the USA about 15 years later than in the rest of the world. We demonstrated a rapid rise from a low base of the key words race/ethnicity and race–ethnicity, seen mostly in the USA-based papers. We predict that this is an interim step whereby race will be superseded by ethnicity, and will be dropped from the compound phrase.

We conclude that the high growth ratio for ethnicity, the adaptation of MEDLINE allowing increased retrieval of more, particularly early, articles using the term ethnicity, the use of the compound phrase race–ethnicity when previously US researchers (especially) mostly used race alone, all confirm the rise of ethnicity. It was only in 1935 that Huxley *et al.* recommended that ethnic type replace the dominant concept of race,<sup>9</sup> an idea that has been supported.<sup>2,4–6</sup> This recommendation has clearly been accepted, especially in Europe, but increasingly in North America too, either using ethnicity on its own or within the compound phrase race/ethnicity.

Afshari and Bhopal's 2002 article<sup>2</sup> implied that there would be continued growth of the term ethnicity (and the related ethnic groups). This holds true. The case for ethnicity to be an independent Medical Subject Heading (MeSH) at the top of the hierarchy is now even stronger than in 2002.<sup>2</sup>

The concept of race, which has a fraught past,<sup>6</sup> may soon be a relic of history, with the exception of studies on racism and the history of race science.

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