The use of 'racial' categories in contemporary South African health research

A survey of articles published in the *South African Medical Journal* between 1992 and 1996

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Objective. In the light of growing concern about the clinical, social and political impact of 'racial' categorisation in health research, this survey aimed to re-evaluate the current use of 'racial' categories in articles published by the *South African Medical Journal*.

Survey design. Any categories that might have been used or interpreted as measures of genetically determined 'racial' differences (including 'racial', ethnic and sociopolitical 'population group' categories) were included in this survey of 668 articles describing South African health research published during the past 5 years. By classifying the research contained in each of these articles it was possible to assess the importance of 'racial' categorisation in study design. The explanations given for any 'racial' differences in health were then used to evaluate the impact of 'racial' categorisation on the perception that innate characteristics were responsible.

Results. Three hundred and seventeen (47.5%) articles mentioned one or more 'racial' categories, 292 (43.7%) of which used 'racial' categories to describe the subjects they studied. The commonest generic labels used for these categories were "race" and "population group", while the commonest descriptive labels referred to traditional 'racial' characteristics such as phenotype, nationality and geographical origin. Only 15 (5.1%) articles fully defined the categories and labels they used, and many more used different generic and descriptive labels interchangeably. The use of 'racial' categories was highest among genetic (73.9%), descriptive (55.3%) and quasi-experimental studies (38.2%), although most used these categories simply to describe the subjects they examined. Of those 162 (24.3%) articles that discussed 'racial' differences in health, only 120 (18.0%) contained an

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explanation, and 60 of these suggested that inherent genetic or behavioural factors were responsible. Nine articles contained derogatory statements that could be interpreted as prejudiced or racist.

Conclusion. **The use of 'racial' categorisation remains widespread in South African health research. By using generic and descriptive labels from traditional 'racial' taxonomies, many of these articles reinforce the perception that distinct human 'races' exist. Although most of the articles failed to explain any of the 'racial' differences in health they observed, it is likely that these will be interpreted as evidence of innate genetic or behavioural differences, like those suggested by the few articles that offered explanations. The continued use of 'racial' categorisation in health research might be inevitable, particularly for examining the impact of social forces, such as apartheid and other forms of racism, that use 'racial' categories to create unequal access to health and health care. However, any studies that use 'racial' categories should be careful to avoid legitimising the biological concept of 'race', misidentifying the causes of 'racial' disparities in health and reinforcing 'racial' prejudice.**

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We have previously argued that the use of 'racial' categories in health research is often ill-conceived, misleading and divisive.[1,2] (Any categories that might be used or interpreted as measures of genetically determined 'racial' differences (including 'racial', ethnic and sociopolitical categories) are included in the 'racial' categories discussed throughout this article.) Ill-conceived, because the use of nationality and physical characteristics (such as African, European, black and white) to differentiate between different groups of people helps to reinforce the discredited view that geographically isolated and genetically distinct human races exist.[3-5] Misleading, because the use of 'racial' categories to assess disparities in health focuses attention on inherent biological and behavioural causes, and tends to ignore the impact of social forces that determine access to health and health care.[4,6,7] Divisive, because the use of 'racial' categories legitimises the process of 'racial' differentiation[8] and creates a 'racially' structured view of society.[4,9,10]

Nowhere are these issues more relevant than in South Africa, where the 'population group' categories created by the 1950 Population Registration Act are routinely used to document patterns of disease.[11] Because these categories were based on quasi-'racial' criteria[12] their use in health research appears to support the validity of genetically distinct human 'races'.[8] Likewise, because these categories were designed to enforce differential access to resources under apartheid,[12] their use by health researchers is at best "uncritical"[a],[13] and at worst legitimises the process of discrimination that took place.[12,14]

Some researchers maintain that 'racial' categories provide a convenient measure of inherent genetic differences,[7,15-17] even though traditional and contemporary 'racial' taxonomies are based on far smaller genetic differences than those that occur across 'non-racial' boundaries.[3,5,18] Nevertheless, past (and current) theories of 'race' have had a profound effect upon the way in which societies differentiate between, and subsequently treat, different groups of people.[9,19-23] For this reason it has been argued that 'racial' categories better reflect the social and political forces that create unequal access to health.[9,24,25] Thus, "however inaccurate, vague and unscientific"[12] 'population group' and 'racial' categories are as measures of discrete genetic differences, they do reflect the way in which social discrimination has created 'racial' disparities in health.[9,12,26,27] Under these circumstances, 'racial' categories provide important information for identifying and eliminating the impact of discrimination on health.[2,28]

Few people would deny that confronting disparities in health between different 'population groups' represents one of the most important challenges facing South African health researchers since the abolition of apartheid. However, it remains unclear whether the use of 'racial' and 'population group' categories in contemporary South African health research does more harm than good by perpetuating 'racial' stereotypes.[2-4,11,29] The aim of the present study was therefore to re-evaluate the use of 'racial' categories by articles published in the *South African Medical Journal* over the past 5 years.

Method

Any research papers and reviews published in the *SAMJ* between 1992 and 1996 (Volumes 81 - 86) were eligible for inclusion in the present study. However, in an attempt to concentrate on reports and reviews of South African health research, the 28 studies conducted outside South Africa and the10 conducted on animal models were excluded, as were discursive and narrative articles published within sections labelled 'Editorial', 'Opinion', 'Issues in Medicine', 'Issues in Public Health', 'Physiology for Physicians', 'Bio-ethics Debates', 'Health Policy Forum', 'Political Forum', 'Medicolegal Forum', 'Medicine and the Law', 'Personal View', 'Health Research Strategy', 'History of Medicine' and 'Philosophy of Science'. The remaining 668 publications were carefully examined and their content classified as either genetic (genealogical, karyotypic and gene sequencing analyses), descriptive (reviews, surveys or case studies), quasi-experimental (case-control and cohort studies, clinical trials and predictive modelling), biochemical (food, drug and pathogen analyses) or professional (policy discussions, practice guidelines and clinician surveys).

Those publications that used 'racial' categories to characterise the subjects they studied were examined in detail to record the precise generic categories (such as

[a] The typographical style used in this review was intended to emphasise that most of the words used by traditional and contemporary 'racial' taxonomies to describe their generic and specific categories are simply labels that do not reflect the consistent use of genotypic, phenotypic or geographical criteria during classification and do not provide an accurate description of each category's genotype, phenotype or geographical origins. Single inverted commas have been used when discussing formal generic labels (such as 'race' or 'population group') and associated descriptive labels (such as 'Caucasian' or 'Coloured') from traditional 'racial' taxonomies, official censuses and apartheid legislation. Double inverted commas have been used when quoting any formal or informal labels cited by previous researchers.

"race", "ethnicity" or "population group") and descriptive labels (such as "Caucasian", "European" or "white") used, and how these were defined. The use of 'racial' categories in each study's design was then classified as either descriptive (where categories were used simply to identify who their subjects were, or to limit the study to specific 'racial' groups), comparative (where categories were used to stratify individuals and compare different groups) or controlling (where categories were used to control for differences in 'racial' composition between different study groups, or to match subjects by 'racial' category) along the lines suggested by Jones *et al.*[26]

Any publications that discussed 'racial' differences in health were identified and any explanations given for these differences were classified as genetic, behavioural or socio-economic, with additional categories for those which suggested that disparities in medical care and/or discriminatory experiences might have been responsible. To provide a conservative estimate of how many contemporary articles attributed 'racial' disparities in health to fundamental genetic differences, any articles which suggested that genetic and non-genetic factors might be partly responsible were allocated to the most fundamental non-genetic explanation given (behavioural and cultural differences first, followed by differences in socio-economic circumstances, differential access to medical care and, finally, discriminatory experiences).

The prevalence of articles that referred to a 'racial' category in their title was then compared with that observed among studies on American subjects published in the *Journal of the American Medical Association* (*JAMA*), and studies on British subjects published in the *British Medical Journal* (*BMJ*) during the same period (1992 - 1996). In this way it was possible to compare the use of 'racial' categories in articles published by the *SAMJ* with that in articles published in similar national medical journals elsewhere.

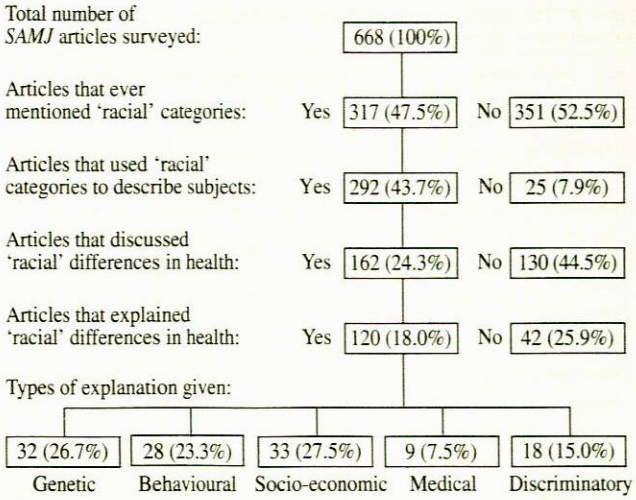

Fig. 1. The use of 'racial' categories in South African health research published by the *SAMJ* between 1992 and 1996. To provide a conservative estimate of how many articles attributed 'racial' disparities in health to fundamental genetic differences, any articles which suggested that genetic *and* non-genetic factors might be partly responsible were allocated to the most fundamental non-genetic explanation given (*behavioural* and cultural differences first, followed by differences in *socio-economic* circumstances, differential access to *medical* care, and finally *discriminatory* experiences).

Results

The prevalence of 'racial' categorisation

Of the 668 publications examined, 317 (47.5%) referred to generic 'racial' categories or descriptive 'racial' labels, 292 (43.7%) of which used these to describe the subjects they examined (Fig. 1). Fifty-three publications (7.9%) referred to a 'racial' category or label in their title, significantly more than those published in either the *JAMA*[b] (5.5%; $\chi^2 = 5.57$, $P = 0.02$) or the *BMJ*[c] (2.3%; $\chi^2 = 117.94$, $P < 0.001$). The most popular generic categories authors used were 'race' or 'racial' (used in 90 articles) followed by 'population group' or 'population' (48 articles), and 'ethnicity' or 'ethnic' (35 articles, Table I). Likewise, the most commonly used descriptive labels referred to phenotypic characteristics (used 465 times, Table II), nationality or geographical origins (used 130 times), all of which are commonly used in contemporary 'racial' taxonomies, such as the four 'population group' categories created and enforced by South Africa's 1950 Population Registration Act.[30] Other descriptive labels were based on language, religion, tribal groups and clans (Table II).

Table I. The generic labels for each of the different 'racial' categories used by the 292 *SAMJ* articles to describe the subjects they examined

Generic label	No. of articles in which used
Race	56
Race group	10
Racial-	17
Non-racial	1
Racial group	6
Ancestry	6
Extraction	1
Descent	4
Origin	9
Indigenous	4
Indigent	2
Immigrant	1
Ethnic group	14
Ethnic-	14
Ethnicity	7
Tribe	2
Clan	1
Religion	1
Cultural group	1
Population group	44
Population	3
Population subgroup	1

[b] A total of 1 100 articles on American subjects published in those sections labelled 'Original Contributions', 'Reviews', 'Special Communications', 'Preliminary Communications' and 'Brief Reports' (excluding multi-national studies and meta-analyses) were included in this survey of *JAMA*.

[c] A total of 1 251 articles on British subjects published in those sections labelled 'Papers', 'Audit in Practice', and 'General Practice' (excluding 'Managing Change in Primary Care', 'The Future of FHSAs', 'Enriching Careers in General Practice', multi-national studies and meta-analyses) were included in this survey of the *BMJ*.

Table II. The different descriptive labels for each of the different 'racial' categories used by the 292 *SAMJ* articles to describe the subjects they examined.

Descriptive label	No. of articles in which used	Descriptive label	No. of articles in which used
Traditional racial	15	Southern Sotho	1
Caucasian	13	Tswana	5
Non-Caucasian	1	Venda	1
Negroid	1	Pedi	3
Phenotypic	465	Pondo	1
Black	212*	San	4
'Black'	1*	Bushman	3
Black African	8*	Khoi-Khoi	2
Non-black	2*	Shangaan	1
White	146*	Swazi	1
'White'	2*	!Kung	1
Non-White	2*	Vasekela	1
Coloured	79*	Barakwana	1
'Coloured'	8*	Language	48
So-called coloured	2*	Afrikaans	7
Coloured/Asian	1*	Afrikaans-speaking	5
Brown	1	English	6
C:W:B	1*	Non-English	1
Nationality and geographical origin	130	English-speaking	6
Asian	40*	Italian-speaking	1
Non-Asian	1*	Arabic-speaking	1
Asiatic	4*	Xhosa-speaking	6
Indian	41*	Xhosa	5
Gujarati	2	Sesotho-speaking	2
Indonesian	1	Tswana-speaking	1
Lebanese	1	Tamil	2
Oriental	2	Urdu	2
Chinese	1	Hindustani	2
Japanese	1	Jelugu	2
African	19*	Religion	15
Afrikaner	5	Jew	3
European	4*	Moslem	4
Eastern European	1	Christian	4
Western European	1	Hindu	4
Western	2	Mixed	24
Ashkenazi	1	Mixed race	10
Italian	1	Mixed ancestry	5
Portuguese	1	Mixed racial origin	3
German	1	Mixed racial descent	1
Tribe or clan	46	Mixed descent	1
Zulu	11	Racially mixed descent	1
Xhosa	6	Mixed ethnicity	1
Sotho	3	Mixed ethnic origin	2
Northern Sotho	1		

* These labels were often used (573 times in all) to describe individuals in each of the four 'population groups', which were sociopolitical 'racial' categories created and enforced by the 1950 Population Registration Act to facilitate segregation under apartheid.[30]

Many of the studies (29.3%) used different generic categories synonymously, and some (17.0%) used more than one descriptive label to identify individuals from the same 'racial' category. For example, 29 studies used "race", "ethnic group", "ethnicity" and/or "population group" synonymously, while 8 used "Asian" and "Indian" interchangeably. Indeed, only 15 of the articles fully defined the labels and categories they used, and some of these were rather confused: in the first of two consecutive studies Kalla *et al.*[31] defined their subjects by citing the 1950 Population Registration Act, yet in the second[32] they simply mentioned recording their subjects' 'race'. Louw *et al.*[33] were

the only authors who specifically mentioned phenotypic characteristics to define the 'racial' categories they used, yet they also qualified this definition by referring to 'population group' categories: "Cognisant of the complexities embodied in the concept of 'race', we define 'race' by skin colour, either comprising 'whites' or 'blacks'. In this survey no 'coloureds' were included."[33] Most of the other articles also referred to "population classification"[34-36] and the 'population groups' created under the 1950 Population Registration Act[27,31] to define the categories they used, while two referred to equivalent categories used in official statistics[37] or censuses.[38] Additional clarification occasionally accompanied the inclusion of individuals classified as 'Coloured' by the Act, and a number of articles described this group using terms such as "mixed descent", "mixed ancestry" or "mixed racial origin" (Table II).

The prevalence of aetiological investigations based on 'racial' categorisation

Not surprisingly, articles containing reports of genetic (73.9%), descriptive (55.3%) and quasi-experimental (38.2%) studies were significantly more likely to use 'racial' categories than professional (33.0%) or biochemical publications (7.7%; $\chi^2 = 23.615$, df = 4, $P < 0.001$). However, over half of the studies (55.1%) used these categories simply to describe their subjects, while 40.1% used them to compare the health of individuals from different 'racial' groups; only 4.8% used them to control for differences in 'racial' composition between different study groups ($\chi^2 = 117.002$, df = 2, $P < 0.001$). Of those 162 articles that went on to discuss any 'racial' differences in health they observed (Fig. 1), most (90, 55.6%) had used 'racial' categories to compare the health of subjects from different groups.

Nevertheless, only 120 articles attempted to explain these differences in health, and half suggested that inherent genetic (26.6%) or behavioural (23.3%) differences were responsible (Fig. 1). Significantly fewer (7.5%; $\chi^2 = 17.58$, df = 4, $P < 0.005$) suggested that differential access to medical care might have been responsible, and only 15.0% mentioned the possible impact of discriminatory practices such as apartheid or other forms of racism. The influence of genetic explanations on the perceived aetiology of 'racial' disparities in health was evident from a number of articles which described[39] or proposed[40-42] different vaccination and treatment protocols for individuals from different 'races' or 'population groups'. In practice, all but one of these[42] used 'racial' categories to refer to people originating from specific geographical areas or those living in segregated communities where the prevalence of disease was substantially different.

The prevalence of justification for the use of 'racial' categorisation

While one article justified its use of 'racial' categories by referring to "national requirements" for data disaggregated by 'population group',[37] a whole series published by Flisher *et al.* in 1992,[27] 1993[35] and 1996[43] thought it necessary to explain why they had not described the 'population group' of the children they had examined, which had been a prior condition of approval given by the Department of Education and Culture of the House of Representatives. (The Department of Education and Culture of the House of Representatives was responsible for the education of those classified as 'Coloured' within South Africa's 'racially' segregated tricameral parliament created in 1984.) Only three articles[27,44,45] carried a disclaimer stating that their use of 'racial' categories did not mean they accepted the scientific or anthropological validity of such categories, and only two of these articles[27,44] paraphrased the 1983 WHO statement on apartheid and health[46] to explain that their use of 'racial' categories simply reflected the all-pervasive nature of 'racial' classification under apartheid. Both acknowledged that the collection of data by 'race' or 'population group' was "arbitrary"[44] and had "dangers",[27] while a third called this "controversial".[47] Together with Kielkowski *et al.*,[48] all four articles justified their use of 'racial' categories as measures of inequity in health and mechanisms for targeting future resources.

However, these articles represent a tiny proportion of those examined in the present study, and their justifications were occasionally imperfect. For example, Kielkowski *et al.*[48] also supported the use of 'racial' categories for identifying "genetic causes" of 'racial' differences in disease, and while Goldin *et al.*[45] stated that their "inclusion of 'race' as a term . . . does not imply our acceptance of genetic race differences" their earlier article[33] was the only one in the present study to define the 'racial' composition of their subjects by explicitly referring to skin colour (see above).

The prevalence of 'racial' stereotyping

Despite such imperfections, both studies clearly attempted to confront their use of 'racial' categories, unlike the vast majority of articles examined, many of which used the 'population group' labels created and enforced under apartheid without justification (Table II). Some of these articles referred to the four nominally independent 'homelands' established under apartheid (Transkei, Boputhatswana, Venda and Ciskei) as "independent",[49] non-South African entities[50,51] or as "territories",[52,53] "states",[54-58] "countries"[53,56] and "republics",[59] all of which seem to legitimise the policies that created these. One article[60] even included Namibia in a review of 'Paediatric surgery within the RSA', despite the fact that Namibia was never part of the Republic of South Africa.

Worse still, a small number of articles contained derogatory statements about individuals from specific 'racial' categories which could be interpreted as prejudiced or racist. Most simply reflected victim-blaming, in which 'racial' disparities in health were said to be the result of "ignorance",[61-63] "unsophisticated" practices[64] or a "fatalistic approach"[65] among specific "population groups". Two alluded to 'racial' differences in permissive sexual behaviour by suggesting that "the incidence of urethral strictures (caused by sexually transmitted disease) . . . can and must be reduced by upliftment of moral . . . standards of the ('racially' defined) population . . .",[66] and that the women from a specific ethnic group "usually bear children soon after menarche".[67] Others referred to the "pervasiveness" of "gang subculture" in one population group's townships[35] and to the children from another who were "lazy".[68]

Discussion

Is 'racial' categorisation common in contemporary South African health research?

The extensive use of 'racial' categories and labels in recent articles published by the *SAMJ* indicates that these are widely accepted in contemporary South African health research. This was also true of contemporary health research on American and British subjects published by *JAMA* and the *BMJ*, although the higher prevalence of 'racial' categories in the titles of articles published by the *SAMJ* indicates that 'racial' categories are more commonly used in South African health research. To a large extent this might reflect the relative historical importance of 'race' in South African society.[69] Indeed, a recent survey of articles published in the *SAMJ* between 1950 and 1990[11] found that 35.3 - 39.0% used 'racial' categories to characterise the subjects they examined, which is similar to the percentage observed among contemporary articles in the present study (43.7%).

Recent reviews of articles published in the *South African Journal of Psychology* between 1970 and 1995,[70] and in the *Journal of the Dental Association of South Africa* between 1979 and 1988,[71] also report that 20 - 30% used 'racial' categories and terms. These are somewhat smaller than the proportions observed in recent editions (1980 - 1990) of the *American Journal of Public Health*[72] and the *American Journal of Epidemiology*,[26] 40 - 80% of which contained a "'race' codeword". However, both of these journals are arguably preoccupied with describing and explaining 'racial' disparities in health.[7,73]

Does 'racial' categorisation legitimise the biological concept of race?

To some extent, it is possible that both of the *SAMJ* reviews overestimated the use of 'race' as a biological construct in South African health research because they classified a variety of categories and labels as 'racial' that were never meant to act as synonyms for 'race'. A few of these were clearly intended to examine relationships between culture, language, religion and health (Table II). Indeed, it could be argued that many of the articles that referred to 'population group', and used descriptive labels associated with the four 'population group' categories created and enforced by South Africa's 1950 Population Registration Act, did so primarily to examine the impact of apartheid on health.

However, in practice, these labels and most of the others listed in Table I are ambiguous[74] and are commonly interpreted as euphemisms[4] or synonyms of genetically determined 'racial' categories.[75,76] This was clearly demonstrated by the 15 - 30% of articles examined in the present study that used generic 'racial' categories and descriptive labels interchangeably. Bourne[13] suggested that these changes in terminology are often intended "to avoid repetition and improve grammatical style". Yet since few of the articles explained how any of these categories were defined and what they were intended to measure, it seems likely that many actually used 'population group', ethnicity, language and religion as proxies for 'race'.

It is tempting to conclude that the use of these ostensibly 'non-racial' terms reflects a desire to sanitise continuing discussions of 'race'[12,77] and thereby to conform to changing norms of "racial etiquette".[78] This is certainly evident from the changes in 'racial' terminology used by articles published between 1950 and 1990.[11] For example, "Bantu" and "European" were the two commonest labels used in 1950 and 1960 yet neither appeared in articles published in 1980 or 1990. The term "Black" or "black" did not appear in any of the articles published in 1950, 1960 or 1970, yet it was the commonest label used in both 1980 and 1990.[a]

Despite these changes in terminology, there was little evidence of a decline in the use of traditional or contemporary 'racial' labels by articles published in the *SAMJ* between 1950 and 1990.[11] Instead, the changing terminology used simply reflected what was "popularly used in the country",[13] which, in turn, followed the changes in terminology that took place during the amendment of legislation governing population registration.[12] Indeed, the majority of those articles which used 'racial' categories in the present study referred directly to "race" or "racial groups", and used descriptive labels associated with traditional or contemporary 'racial' taxonomies (Tables I and II). Only three of the articles[27,44,45] carried a disclaimer to indicate that their use of 'racial' categories was not intended to imply that they supported the scientific validity of 'race' as a biological construct in human biology. Under these circumstances it is clear that the widespread use of 'racial' categories in contemporary South African health research helped to maintain the impression that genetically distinct human 'races' exist.[8]

Does 'racial' categorisation misidentify the aetiology of disease?

Despite the widespread use of 'racial' categories in contemporary South African health research, the majority of articles used these categories simply to describe their subjects. Fewer articles did so to compare or control for 'racial' differences between different study groups, and while those that used 'racial' categories to compare different 'racial' groups were more likely to discuss 'racial' differences in health, few of these offered any explanation for the differences they observed (Fig. 1). This suggests that 'racial' categories were rarely used as a fundamental part of study design and were rarely used to discuss the aetiology of 'racial' differences in disease.[26] Instead, the use of 'racial' categories seems to reflect the scientific practice of establishing the generalisability and external validity of research findings. In this context the predominantly descriptive nature of 'racial' categorisation could best be described as the *passive* acceptance of 'racial' categories in health research rather than the active application thereof.[79]

Goodman[5] calls this the "soft" use of 'racial' categories, and believes that while "most anthropologists today acknowledge that biological races are a myth", a large

[a] During this period there were a number of changes in editorial policy with regard to appropriate 'racial' terminology and these were partly responsible for the different generic and descriptive 'racial' categories used by articles published in the *SAMJ* between 1950 and 1996.

number are "confused" and engage in the "soft" use of 'race': "Some do not understand why race biology is such bad science, yet they avoid any appeal to race because they do not want to be politically incorrect. Others apply race as a quasi-biological, quasi-genetic category and cannot figure out what is wrong with it. Still others think the stance against racial biology is political rather than scientific." The "soft" use of 'racial' categories by this "well-meaning group" might not appear to be as damaging as the "hard" use of 'racial' categories by "true believers and scientific racists",[5] but "the continued 'soft' use of race . . . acts to legitimise the 'hard' use". In particular, the use of 'racial' categories in "black box" epidemiology, where the "causal mechanism behind an association remains unknown", creates the impression that 'the causal mechanism is within the . . . '"box"',[4] in this case 'race'. Put another way, "when different rates of disease remain unexplained, the category used to distinguish between two groups of people tends to assume causal significance",[1] and "when the category used is based on 'race' . . . (unexplained) differences in rates of disease tend to reinforce the view that fundamental, biological or behavioural differences are responsible".[1] Thus, by failing to explain the 'racial' disparities in health they observed, many of the articles examined in the present study implied that fundamental 'racial' differences were actually responsible. Even when 'racial' categories are used simply to describe the subjects being examined, they create the impression that genetically distinct human 'races' exist and that heritable characteristics might therefore be responsible for the differences in health observed.[79]

The relatively small number of articles that offered an explanation for the 'racial' differences in health they observed did little to dispel this impression. Over half of these articles suggested that fundamental genetic or behavioural differences might have been responsible (Fig. 1). In fact, an even larger number of studies actually supported this point of view, because those articles which suggested that 'racial' and 'non-racial' factors might be partly responsible were allocated to the most fundamental non-genetic explanation given (behavioural and cultural differences first, followed by differences in socio-economic circumstances, differential access to medical care and, finally, discriminatory experiences). Together with those articles that described[39] or proposed[40-42] different treatment protocols for individuals from different 'racial' groups, it is clear that the use of 'racial' categories by articles published in the *SAMJ* focused attention on inherent causes of 'racial' disparities in health, and paid less attention to the impact of social forces (whether socio-economic, medical or discriminatory) that determine access to health and health care.

Is 'racial' categorisation ever justifiable?

In view of the potential damage that 'racial' categories can have on the perceived aetiology of 'racial' disparities in health, it has been argued that health researchers ought to avoid using 'racial' categories whenever possible.[1,2,24,45,80-83] However, the seemingly indelible impact of historical and contemporary forces that underlie 'racial' differences in social class, socio-economic status and health (particularly in South Africa[84]) has led some researchers to suggest that the continued use of 'racial' categories is "inevitable".[8] Indeed, there are at least three plausible reasons for continuing to use 'population group' categories in South African health research: (*i*) to link datasets of health information when the quality of data collected differed between different 'population groups';[16] (*ii*) to provide a mechanism for matching the subjects in different experimental groups, where there is no other alternative but to use 'population group' as a proxy for whatever packet of social class, socio-economic status and social discrimination these categories might describe; and (*iii*) to monitor any association between 'population group' and health that is independent of socio-economic disadvantage and might provide evidence of possible discriminatory practices.

Numerous authors have commented that the differing quality of health statistics for different 'population groups' in South Africa represents a "humbling"[68] if not disgraceful state of affairs,[36,85] since it reflects the unequal distribution of resources to monitor the health status of different groups.[86] It can only be hoped that improved data collection among formerly under-researched groups will reduce the necessity of linking current and future databases using 'population group' categories. Likewise, it is hoped that researchers will be encouraged to collect appropriate measures of social class and socio-economic status in the future[26,79] so that conceptually flawed 'racial' categories are no longer used as crude proxies thereof.[87]

Is 'racial' categorisation necessary to monitor racism?

While it is essential that health researchers continue to investigate the prevalence and impact of discriminatory experiences,[88-91] it should be possible to develop alternative techniques for measuring these experiences,[7,88,90,91] and thereby avoid using 'population group' or other 'racial' categories to evaluate the impact of social discrimination. Indeed, it is not clear whether these categories accurately reflect differences in social discrimination experienced by individuals from different 'racial' groups.[92] However, self reports of discrimination[93] are unlikely to be any more accurate because many individuals conceal their discriminatory experiences through internalisation or denial.[94,95]

Until more practical alternatives are developed,[7] it may be difficult to obtain an objective assessment of these experiences without examining 'population group' or 'racial' disparities in outcome, although it is essential that researchers who use this approach also describe and account for differences in pre-existing socio-economic disadvantage.[24,73,76,83,95-97] Under these circumstances, any studies that use 'racial' categories should include a disclaimer, as suggested by Ramphele,[8] to ensure that by referring to 'race' or 'population group' they do not provide tacit support for the scientific validity of genetically distinct human 'races'. Examples of appropriate disclaimers can be found in a variety of articles published in the *SAMJ*[86,98] and elsewhere,[99] including the WHO's 1983 report on apartheid and health[46] and the ANC's health plan for South Africa.[100]

See next while

Is it possible to improve the use of 'racial' terminology?

The choice of appropriate nomenclature remains a "scientist's dilemma",[13] yet it is not within the scope of this article to recommend which 'racial' terms health researchers should use.[13,20,101-103] Indeed, because 'racial' categories and labels mean different things to different people in different places at different times,[4,78,88,96,104,105] it is unrealistic to establish a single taxonomy and nomenclature for universal use,[20,105] which would be all-inclusive yet allow researchers to examine different dimensions of ethnicity and social status in the future.[96] Nevertheless, the huge variety of different categories and labels employed by articles examined in the present study (Tables I and II) clearly illustrates the potential for confusion and stresses the importance of using these terms consistently and unambiguously. Many of the articles may have assumed that 'population group' categories are self-explanatory in a South African context, because these terms are defined by the 1950 Population Registration Act. For example, one article referred to 'Coloured', 'White' and 'Black' subjects using only the abbreviation "race (C:W:B)",[106] which illustrates how commonplace these labels have become in South African society.[13]

However, when researchers fail to define the term 'population group', the meaning of these categories might not be clear to an international audience, particularly as many of the contemporary 'population group' labels (particularly 'Black' and 'White') are in common use internationally as 'racial' categories,[26] while others (such as 'Asian' and 'Indian') refer to different 'racial' groups in different countries.[102,107] Indeed, authors occasionally thought it necessary to clarify what they meant when they described individuals classified as 'Coloured' by the 1950 Population Registration Act, which is a contemporary 'racial' label peculiar to South Africa.[102] At the same time, the changes in terminology that occurred during the implementation of the Act[11,13,30] mean that more than one label exists for each of the four categories (such as 'Black' and 'African', 'Asian' and 'Indian'), and these have the potential to create additional confusion unless authors define them clearly and use them consistently. This was demonstrated when Kielkowski *et al.*[108] conducted a feasibility study for a new death certificate and obtained a number of ambiguous responses in the section marked "race group": One respondent used the abbreviation "B" which the authors thought could have meant "Black" or "Blanke" (which is derived from the Afrikaans word 'blank' meaning 'white'), while another wrote "African" which they thought might be interpreted as either "Black" or "White". Unambiguous and detailed definitions of 'population group' or other 'racial' categories used would help to avoid this confusion.[4,13,20,76,107] They would also help to articulate the social forces responsible for any 'population group' or 'racial' differences observed, by referring directly to the formal and informal sociopolitical processes which categorise people by 'race' and create the framework for subsequent discriminatory practices.[7,88,92]

Conclusion

By actively engaging rather than avoiding the issue of 'race', Jones *et al.*[26] and Muntaner *et al.*[7] have argued that researchers will be able to confront the widespread misconception that 'racial' disparities in health are innate.[15-17] In this way, researchers will help to reinvent 'race' as a measure of social discrimination and will redefine discussions of 'racial' disparities in health as those that describe the impact of 'racial' classification and racism on health. In the process researchers need to acknowledge the political and social sensitivity of discussing 'racial' disparities in health.[79] In particular, a variety of terms and labels, even the expression "non-",[109] are potentially offensive.[12,13,102] Authors should also be careful to avoid statements that might be interpreted as derogatory or prejudiced, such as those contained in a few of the articles examined in the present study. At best these statements imply that health researchers are oblivious to the potential political and social impact of their work.[3,4,7,23,76,79] At worst they suggest that racist ideology persists within contemporary South African health research.[76,79] Either way, they provide the clearest example of how divisive the use of 'racial' categories in health research can be.

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REFERENCES

1. Ellison GTH, De Wet T, IJsselmuiden CB, Richter LM. Desegregating health statistics and health research in South Africa. *S Afr Med J* 1996; **86:** 1257-1262.
2. Ellison GTH, De Wet T, IJsselmuiden CB, Richter LM. Segregated health statistics perpetuate racial stereotypes (Letter). *BMJ* 1997; **314:** 1485.
3. Gould SJ. *Ever Since Darwin*. New York: Harcourt Brace College Publishers, 1977.
4. Bhopal R. Is research into ethnicity and health racist, unsound, or important science? *BMJ* 1997; **314:** 1751-1756.
5. Goodman A. Bred in the bone? *The Sciences* 1997; **37:** 20-25.
6. Cooper T, David R. The biological concept of race and its application to public health and epidemiology. *J Health Polit Policy Law* 1986; **11:** 97-116.
7. Muntaner C, Nieto FJ, O'Campo P. The Bell Curve: On race, social class and epidemiologic research. *Am J Epidemiol* 1996; **144:** 531-536.
8. Ramphele MA. Health in South Africa's future. *S Afr Med J* 1992; **82:** 377.
9. Brace CL. Region does not mean 'race' — reality versus convention in forensic anthropology. *J Forensic Sci* 1995; **40:** 171-175.
10. Appiah KA, Guttman A. *Color Conscious. The Political Morality of Race*. Princeton: Princeton University Press, 1996.
11. Ellison GTH, De Wet T. Re-examining the content of the South African Medical Journal during the formalisation of 'racial' discrimination under apartheid. Report compiled for the Medical Accountability Project's submission to the Truth and Reconciliation Commission, 1997.
12. West ME, Boonzaier EA. Population groups, politics and medical science. *S Afr Med J* 1989; **76:** 185-186.
13. Bourne DE. Nomenclature in a pigmentocracy — a scientist's dilemma. *S Afr Med J* 1989; **76:** 185.
14. Lee NC. A question of race. *S Afr Med J* 1989; **76:** 184.
15. Urbina EM, Berenson GS. Importance of determining racial differences in cardiovascular risk factors in childhood. *J Pediatr* 1996; **129:** 191-192.
16. Walker ARP, Sitas F, Cleaton-Jones PE, Vorster HH, Whittaker DE, Segal I. Desegregating health statistics and health research in South Africa (Letter). *S Afr Med J* 1997; **87:** 329-330.
17. Walker ARP, Sitas F, Cleaton-Jones PE, Vorster HH, Whittaker DE, Segal I. Desegregating health statistics and health research in South Africa (Letter). *S Afr Med J* 1997; **87:** 1701-1702 (this issue).
18. Lewontin RC. Apportionment of human diversity. *Evol Biol* 1972; 6: 381-398.
19. Sauer NJ. Forensic anthropology and the concept of race: If races don't exist, why are forensic anthropologists so good at identifying them? *Soc Sci Med* 1992; **34:** 107-111.
20. Hahn RA, Stroub DF. Race and ethnicity in public health surveillance: Criteria for the scientific use of social categories. *Public Health Rep* 1994; **109:** 7-15.
21. Kennedy KAR. But Professor, why teach race identification if races don't exist? *J Forensic Sci* 1995; **40:** 797-800.
22. Smaje C. *Health, 'Race' and Ethnicity: Making Sense of the Evidence*. London: King's Fund/Share, 1995.
23. Nickens H. Race and ethnicity: A compelling research agenda (Letter). *Ann Intern Med* 1997; **126:** 252.
24. Ellison GTH, De Wet T, IJsselmuiden CB, Richter LM. Desegregating health statistics and health research in South Africa (Response to letter). *S Afr Med J* 1997; **87:** 330-331.
25. Mason D. A rose by any other name . . .? Categorization, identity and social science. *New Community* 1990; **17:** 123-133.

26. Jones CP, LaVeist TA, Lillie-Blanton M. 'Race' in the epidemiologic literature: An examination of the *American Journal of Epidemiology*, 1921-1990. *Am J Epidemiol* 1991; **134:** 1079-1084.
27. Flisher AJ, Joubert G, Yach D. Mortality from external causes in South African adolescents, 1984-1986. *S Afr Med J* 1992; **81:** 77-80.
28. Yach D. Removal of race identification on identity and other documents. ESSA: Unpublished discussion document for the Epidemiological Society of Southern Africa, 1991.
29. Szabo CP. Race as a research parameter (Letter). *S Afr Med J* 1996; **86:** 696-698.
30. Boonzaier E, Sharp J. *South African Keywords. The Uses and Abuses of Political Concepts*. Cape Town: David Philip, 1988.
31. Kalla A, Fataar AB, Bewerunge L. Assessment of age-related bone loss in normal South African women by means of the Hologic QDR 1000 system. *S Afr Med J* 1994; **84:** 398-404.
32. Kalla AA, Meyers OL, Kotze TJvW, Laubscher R. Corticosteroid therapy and bone mass — comparison of rheumatoid arthritis and systemic lupus erythematosus. *S Afr Med J* 1994; **84:** 404-409.
33. Louw SJ, Goldin JG, Joubert G. Spirometry of healthy adult South African men. *S Afr Med J* 1996; **86:** 814-819.
34. Schuurmans-Stekhoven PM, Whitelaw DA, Meiring P de V. Factors associated with early admission to hospital. *S Afr Med J* 1992; **81:** 261-263.
35. Flisher AJ, Ziervogel CF, Chalton DO, Leger PH, Robertson BA. Risk-taking behaviour of Cape Peninsula high-school students: Parts I-VIII. *S Afr Med J* 1993; **83:** 469-497.
36. Hitzeroth W. Report on a national workshop (1992) on screening for congenital hypothyroidism in South Africa. *S Afr Med J* 1994; **84:** 106-108.
37. Dyer JJ, Naidoo KN, Knight S, Mjeveku T, Munro G, Robinson A. Effect of an immunisation campaign in Natal and KwaZulu on vaccination coverage rates, 1990-1991. *S Afr Med J* 1996; **86:** 158-161.
38. Steenkamp JHB, Simson IW, Theron W. Cardiovascular causes of death at Tshepong Hospital in 1 year, 1989-1990. *S Afr Med J* 1992; **81:** 142-146.
39. Metcalf CA, Yach D, De Beer ZJ. Missed opportunities for immunisation at hospitals in the western Cape — a reappraisal. *S Afr Med J* 1994; **84:** 149-152.
40. Hift RJ. Hepatitis A. *S Afr Med J* 1994; **84:** 526-529.
41. Dusheiko GM. Management of chronic hepatitis B and C. *S Afr Med J* 1994; **84:** 563-570.
42. Opie LH, Steyn K. Rationale for the hypertension guidelines for primary care in South Africa. *S Afr Med J* 1995; **85:** 1325-1338.
43. Flisher AJ, Ziervogel CF, Chalton DO, Leger PH, Robertson BA. Risk-taking behaviour of Cape Peninsula high-school students. Parts IX-X. *S Afr Med J* 1996; **86:** 1090-1098.
44. Grant RJ. Equity versus humanity in health care. *S Afr Med J* 1993; **83:** 330-332.
45. Goldin JG, Louw SJ, Joubert G. Spirometry of healthy adult South African men. Part II. Interrelationship between socio-economic factors and 'race' as determinants of spirometry. *S Afr Med J* 1996; **86:** 820-826.
46. World Health Organisation. *Apartheid and Health*. Geneva: WHO, 1983.
47. Volmink J. The SASPREN primary care survey — who consults the family doctor? *S Afr Med J* 1996; **86:** 241-245.
48. Kielkowski D, Ellis JB, Lowe R. The proposed death certificate for South Africa. Part I. Death certificate description. *S Afr Med J* 1992; **82:** 170-172.
49. Levin CV, Sitas F, Odes RA. Radiation therapy services in South Africa. *S Afr Med J* 1994; **84:** 349-351.
50. Von Schirnding YER, Ehrlich RI. Environmental health risks of toxic waste site exposures — an epidemiological perspective. *S Afr Med J* 1992; **81:** 546-549.
51. Sitas F, Isaäcson M. Histologically diagnosed cancer in South Africa, 1987. *S Afr Med J* 1992; **81:** 565-568.
52. Schoub BD. Estimations of the total size of the HIV and hepatitis B epidemics in South Africa. *S Afr Med J* 1992; **81:** 63-66.
53. Benade MM. Distribution of health personnel in the Republic of South Africa with special reference to medical practitioners. *S Afr Med J* 1992; **82:** 260-263.
54. Martin G, Steyn K, Yach D. Beliefs about smoking and health and attitudes toward tobacco control measures. *S Afr Med J* 1992; **82:** 241-245.
55. Zöllner E, Carlier ND. Breast-feeding and weaning practices in Venda, 1990. *S Afr Med J* 1993; **83:** 580-583.
56. Küstner HGV, Swanevelder JP, Van Middelkoop A. National HIV surveillance — South Africa, 1990-1992. *S Afr Med J* 1994; **84:** 195-200.
57. Sitas F. Histologically diagnosed cancers in South Africa, 1988. *S Afr Med J* 1994; **84:** 344-348.
58. Pestana JAX, Steyn K, Leiman A, Hartzenberg GM. The direct and indirect costs of cardiovascular disease in South Africa in 1991. *S Afr Med J* 1996; **86:** 679-684.
59. Tshibangu NN. HIV infection in Bophuthatswana. *S Afr Med J* 1993; **83:** 36-39.
60. Millar AJW, Rode H, Davies MRQ, Cywes S. Paediatric surgery in the RSA — practice and training. *S Afr Med J* 1993; **83:** 85-88.
61. Wilson DAB, Wormald PJ. Battery acid — an agent of attempted suicide in black South Africans. *S Afr Med J* 1995; **85:** 529-531.
62. Heystek MJ, De Jonge ETM, Meyer HP, Lindeque BG. Screening for cervical neoplasia in Mamelodi — lessons from an unscreened population. *S Afr Med J* 1995; **85:** 1180-1182.
63. Mwinyoglee J, Amoko DHA, Simelela N, Marivate M. Eclampsia at Ga-Rankuwa Hospital. *S Afr Med J* 1996; **86:** 1536-1539.
64. Pike RE, Odell JA, Kahn D. Public attitudes to organ donation in South Africa. *S Afr Med J* 1993; **83:** 91-94.
65. Peters AL. Retinal detachment in black South Africans. *S Afr Med J* 1995; **85:** 158-159.
66. Steenkamp JW, De Kock MLS. Epidemiology of urethral stricture at Tygerberg Hospital. *S Afr Med J* 1994; **84:** 267-268.
67. Coetzee MJ, Badenhorst PN, De Wet JI, Joubert G. Haematological condition of the San (Bushmen) relocated from Namibia to South Africa. *S Afr Med J* 1994; **84:** 416-420.
68. Walker ARP, Adam A. Küstner HGV. Changes in total death rate and in ischaemic heart disease death rate in interethnic South African populations, 1978-1989. *S Afr Med J* 1993; **83:** 602-605.
69. Dubow S. *Illicit Union. Scientific Racism in Modern South Africa*. Johannesburg: Witwatersrand University Press, 1995.
70. Durrheim K, Mokeki S. Race and relevance: A content analysis of the *South African Journal of Psychology*. *S Afr J Psychol* 1997; **27:** (in press).
71. Chikte UME, Gilbert L, Brand AA, Lewis HA. Racial classification in dental literature: Is it always necessary? *J Dental Assoc S Afr* 1989; **44:** 337-339.
72. Ahdieh L, Hahn RA. Use of the terms 'race', 'ethnicity' and 'natural origins': A review of articles in the *American Journal of Public Health*, 1980-89. *Ethnicity Health* 1996; **1:** 95-98.
73. Krieger N. Analyzing socioeconomic and racial/ethnic patterns in health and health care. *Am J Public Health* 1993; **83:** 1086-1087.
74. Hilton C. Collecting ethnic group data for inpatients: Is it useful? *BMJ* 1996; **313:** 923-925.
75. Wilkinson DY, King G. Conceptual and methodological issues in the use of race as a variable: Policy implications. *Milbank Q* 1987; **65:** 56-71.
76. Senior PA, Bhopal R. Ethnicity as a variable in epidemiological research. *BMJ* 1994; **309:** 327-330.
77. Baxter C. *Race Equality in Health Care and Education*. London: Baillière Tindall, 1997.
78. White JE. 'Tiger and race'. *Time* 1997; May 5, 32-36.
79. Osborne NG, Feit MD. The use of race in medical research. *JAMA* 1992; **267:** 275-279.
80. Bogue G. How to get along without race in demographic analysis. *Soc Biol* 1971; **18:** 387-393.
81. Terris M. Desegregating health statistics. *Am J Public Health* 1973; **63:** 477-480.
82. Wyatt GE. Examining ethnicity versus race in AIDS related research. *Soc Sci Med* 1991; **33:** 37-45.
83. Bagley C. A plea for ignoring race and including insured status in American research reports on social science and medicine. *Soc Sci Med* 1995; **40:** 1017-1019.
84. Van Rensburg HCJ, Fourie A. Inequalities in South African health care: Part II. Setting the record straight. *S Afr Med J* 1994; **84:** 99-103.
85. Botha JL, Bradshaw D. African vital statistics — a black hole? *S Afr Med J* 1985; **67:** 977-981.
86. McIntyre DE, Dorrington RE. Trends in the distribution of South African health care expenditure. *S Afr Med J* 1990; **78:** 125-129.
87. Krieger N, Williams DR, Moss NE. Measuring social class in US public health research: Concepts, methodologies and guidelines. *Annu Rev Public Health* 1997; **18:** 341-378.
88. Warren RC, Hahn RA, Bristow L, Yu ESH. The use of race and ethnicity in public health surveillance. *Public Health Rep* 1994; **109:** 4-6.
89. American College of Epidemiology. Statement of principles. Epidemiology and minority populations. *Ann Epidemiol* 1995; **5:** 505-508.
90. Broman CL. The health consequences of racial discrimination: A study of African Americans. *Ethnicity Dis* 1996; **6:** 148-153.
91. Jackson JS, Brown TN, Williams DR, Torres M, Sellers SL, Brown K. Racism and the physical and mental health status of African Americans: A thirteen year national panel study. *Ethnicity Dis* 1996; **6:** 132-147.
92. Freeman HP, Visco FM, Calabresi P. The meaning of race in science — considerations for cancer research. (Unpublished statement from a meeting of the United States President's Cancer Panel to assess special populations in the National Cancer Program, 1997.)
93. McNeilly MD, Anderson NB, Armstead CA, *et al*. The perceived racism scale: A multidimensional assessment of the experience of white racism among African Americans. *Ethnicity Dis* 1996; **6:** 154-166.
94. Krieger N. Racial and gender discrimination: Risk factors for high blood pressure? *Soc Sci Med* 1990; **30:** 1273-1281.
95. Krieger N, Sidney S. Racial discrimination and blood pressure: The CARDIA study of young black and white adults. *Am J Public Health* 1996; **86:** 1370-1378.
96. McKenzie K, Crowcroft NS. Describing race, ethnicity, and culture in medical research. *BMJ* 1996; **312:** 1054.
97. Ellison GTH, De Wet T, IJsselmuiden CB, Richter LM. Desegregating health statistics and health research in South Africa (Response to letter). *S Afr Med J* 1997; **87:** (this issue).
98. Zwarenstein MF, Price MR. The 1983 distribution of hospitals and hospital beds in RSA by area, race, ownership and type. *S Afr Med J* 1990; **77:** 448-452.
99. Price M. Health care as an instrument of Apartheid policy in South Africa. *Health Policy Plan* 1986; **1:** 158-170.
100. African National Congress. *A National Health Plan for South Africa*. Johannesburg: ANC, 1994.
101. Jenkins T, Tobias PV. Nomenclature of population groups in southern Africa. *Afr Stud* 1977; **36:** 49-55.
102. Cameron N. The use of racial terminology. ASSA: Unpublished discussion document for the Anatomical Society of Southern Africa, 1992.
103. Ellison GTH, De Wet T, IJsselmuiden CB, Richter LM. How should researchers cite information collected using pre-defined ethnic, 'racial' and 'population group' categories? (Letter). *BMJ* 1997; **314:** (in press).
104. Hahn RA. The state of federal health statistics on racial and ethnic groups. *JAMA* 1992; **267:** 268-271.
105. Chaturvedi N, McKeigue PM. Methods for epidemiological surveys of ethnic minority groups. *J Epidemiol Community Health* 1994; **48:** 107-111.
106. Lemmer ER, Swanepoel CR, Kahn D, Van Zyl-Smit R. Transplantation for diabetic nephropathy at Groote Schuur Hospital. *S Afr Med J* 1993; **83:** 88-90.
107. British Medical Journal. Ethnicity, race, and culture: guidelines for research, audit, and publication. *BMJ* 1996; **312:** 1094.
108. Kielkowski D, Ellis JB, Lowe R, Robertson J. The proposed death certificate for South Africa. Part II. Feasibility study. *S Afr Med J* 1992; **82:** 173-175.
109. Lingham P. Muslim customs regarding autopsies (Letter). *S Afr Med J* 1995; **85:** 1199.

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