Acceptance into medical school and racial discrimination

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BMJ 1995;310:501-2

For several years the Universities and Colleges Admission Service has monitored the ethnic group of applicants to universities in the United Kingdom. We investigated the acceptance rates to medical school of applicants according to their ethnic group.

Subjects, methods, and results

We obtained permission from the deans of all medical schools in the United Kingdom to analyse the data from the Universities and Colleges Admission Service on candidates who applied and were accepted for places in 1992. We classified candidates as belonging to an ethnic minority group when they identified themselves as being Chinese, Bangladeshi, Indian, Pakistani, Afro-Caribbean, or black. Candidates who did not provide information on their ethnic origin and those from overseas were excluded from the analysis. Applicants were stratified according to score at A level (30-26 or 25 or less, grade A scoring 10 points, grade B eight, grade C six, grade D four, and grade E two, with the maximum possible score being 30). Applicants with passes in the Scottish Certificate of Education were excluded because of problems in comparing the two examinations. To adjust for A level score a stratified analysis using a Mantel-Haenszel test[1] was carried out and expressed as an odds ratio—that is, the odds of white candidates being accepted into medical school compared with the odds of candidates from ethnic minority groups being accepted.

The table shows the likelihood of being accepted into medical school according to ethnic group after controlling for A level score. The overall weighted Mantel-Haenszel odds ratio for acceptance to medical school was 1·15 (95% confidence interval 1·02 to 1·29) for those with A level scores of 30-26 and 2·02 (1·89 to 2·72) for those with scores of 25 or less.

Comment

Many factors could explain the differences between white applicants and those from ethnic minority groups in their acceptance rates to medical school. We were able to stratify A level scores into only two bands. Candidates within these bands might have had a wide range of results, and ethnic differences could account for the number of points scored.

In some medical schools the confidence intervals of the odds ratios were wide because of the small number of applicants from ethnic minority groups and the fact that we used data from only one year. Although these results should be interpreted with caution, we found significant differences in the odds ratio in several schools.

The data we analysed relate only to academic achievement, but other factors are considered equally important in selecting students for medical school. We cannot comment on how factors such as type of schooling, regional differences, and previous experience influence whether an applicant is offered a place.

Likelihood of acceptance to medical schools in 1992 of white applicants compared with applicants from ethnic minority groups according to score at A level

	Score at A level 30-26					Score at A level ≤25					Odds ratio for all strata	
	No of applicants		No of acceptances		Odds ratio of	No of applicants		No of acceptances		Odds ratio of		
Medical school	White	Ethnic minority group	White	Ethnic minority group	acceptance (95% confidence interval)*	White	Ethnic minority group	White	Ethnic minority group	acceptance (95% confidence interval)*	Crude	Weighted (95% confidence interval)†
Aberdeen	105	7	15	3	0·22 (0·04 to 1·41)	102	14	10	0		0·82	0·72 (0·18 to 4·17)
Belfast	226	3	129	1	2·66 (0·19 to 75·2)	134	3	1	0		2·83	2·71 (0·15 to 159)
Birmingham	643	133	139	19	1·65 (0·96 to 2·89)	465	207	13	1	5·79 (0·79 to 119·30)	2·54	1·88 (1·12 to 3·26)
Bristol	572	78	85	10	1·19 (0·56 to 2·56)	338	91	16	3	1·46 (0·39 to 6·44)	1·50	1·22 (0·66 to 2·45)
Cambridge	428	140	161	35	1·81 (1·15 to 2·85)	70	46	3	0		2·12	1·88 (1·21 to 2·97)
Charing Cross and Westminster	223	139	33	18	1·17 (0·6 to 2·27)	512	467	59	22	2·63 (1·55 to 4·52)	2·02	1·93 (1·30 to 2·95)
Dundee	256	14	32	2	0·86 (0·17 to 5·82)	318	90	42	6	2·13 (0·83 to 5·78)	1·78	1·76 (0·80 to 4·47)
Edinburgh	615	99	104	24	0·64 (0·37 to 1·09)	246	47	0	0		0·64	0·64 (0·37 to 1·09)
Glasgow	237	20	39	2	1·77 (0·37 to 11·54)	199	41	9	1	1·89 (0·23 to 41·04)	2·39	1·81 (0·51 to 7·72)
King's College	161	150	28	30	0·84 (0·46 to 1·55)	325	346	14	11	1·37 (0·58 to 3·29)	1·05	0·99 (0·61 to 1·62)
Leeds	749	173	112	21	1·27 (0·75 to 2·16)	562	263	29	4	3·52 (1·16 to 11·94)	1·98	1·61 (1·01 to 2·60)
Leicester	338	78	64	17	0·84 (0·44 to 1·60)	436	202	24	7	1·62 (0·65 to 4·21)	1·37	1·06 (0·64 to 1·79)
Liverpool	385	80	76	25	0·54 (0·31 to 0·96)	472	142	30	3	3·14 (0·9 to 13·13)	0·98	0·84 (0·52 to 1·39)
Royal London Hospital	158	82	29	8	2·08 (0·85 to 5·23)	343	327	36	7	5·36 (2·24 to 13·41)	3·02	2·77 (1·89 to 4·31)
Manchester	543	186	109	51	0·66 (0·44 to 0·99)	479	272	30	11	1·59 (0·75 to 3·42)	1·01	0·83 (0·59 to 1·18)
Newcastle	566	87	90	10	1·46 (0·7 to 3·12)	509	83	9	1	1·48 (0·19 to 31·51)	1·47	1·46 (0·73 to 2·99)
Nottingham	929	162	92	8	2·12 (0·97 to 4·81)	750	210	17	3	1·60 (0·44 to 6·93)	2·28	1·98 (1·04 to 4·14)
Oxford	271	74	77	14	1·70 (0·86 to 3·39)	78	31	2	1	0·79 (0·05 to 22·8)	1·76	1·63 (0·86 to 3·26)
Royal Free Hospital	209	85	25	6	1·79 (0·66 to 5·08)	449	359	39	13	2·53 (1·28 to 5·08)	2·08	1·88 (0·9 to 3·93)
Sheffield	613	132	77	16	1·04 (0·57 to 1·93)	616	238	33	3	4·43 (1·29 to 18·30)	1·82	1·55 (0·92 to 2·69)
Southampton	405	61	58	8	1·11 (0·48 to 2·66)	505	150	22	5	1·32 (0·46 to 4·05)	1·47	1·19 (0·63 to 2·41)
St Andrews	110	14	32	2	2·46 (0·48 to 16·92)	97	49	12	1	6·78 (0·87 to 143·07)	5·40	3·83 (1·12 to 20·53)
St Bartholomew's Hospital	199	92	43	24	0·78 (0·42 to 1·45)	256	145	16	3	3·16 (0·85 to 13·87)	1·16	1·07 (0·63 to 1·85)
St George's Hospital	244	132	61	25	1·32 (0·87 to 2·00)	476	369	44	14	2·58 (1·35 to 5·03)	2·02	1·85 (1·23 to 2·83)
St Mary's Hospital	296	138	37	7	2·67 (1·10 to 6·77)	704	442	34	13	1·67 (0·84 to 3·38)	2·14	2·03 (1·20 to 3·56)
University College and Middlesex	472	217	59	18	1·58 (0·88 to 2·86)	1085	810	28	15	1·39 (0·75 to 2·59)	1·78	1·50 (0·98 to 2·35)
United Medical and Dental Schools of Guy's and St Thomas's Hospitals	233	152	68	55	0·73 (0·46 to 1·15)	253	284	23	15	1·79 (0·87 to 3·91)	1·20	0·96 (0·65 to 1·40)
Wales	288	69	70	11	1·69 (0·81 to 3·36)	442	186	23	5	1·99 (0·70 to 6·06)	2·18	1·79 (1·00 to 3·38)

*White candidates: candidates from ethnic minority groups.
†Mantel-Haenszel test.

Factors other than ethnic group—for example, sex—could account for some of the differences that we observed.

A higher proportion of applicants to medical schools than in the population overall are from ethnic minority groups.[2] Medical schools may therefore inadvertently be trying to restrict the overall numbers of students from ethnic minority groups to reflect population distributions in the United Kingdom. This may explain why white students with lower A level scores (25 or less) seem to have a greater chance of being accepted than their colleagues from ethnic minority groups with similar scores. There did not seem to be any selection bias in favour of white candidates among applicants with scores of 30-26.

The process of selecting students for undergraduate medical courses has long been a problem for those having to select. Admission policies are not standard or defined so the policies of individual medical schools vary greatly.[3] Our data suggest that some medical schools could be accused of practising discriminatory admissions policies.

AE and DP were commissioned by the Medical Practitioners Union, London SE1 1UN, to carry out this study.

1 Fleiss JL. *Statistical methods for rates and proportions.* 2nd ed. New York: Wiley, 1981:173.
2 Vellins S. South Asian students in British universities. A statistical note. *New Community* 1982;10:206-12.
3 Anderson J, Hughes D, Wakeford R. Medical student selection: a tentative attempt to establish a code of practice. *BMJ* 1980;280:1216.

(Accepted 23 November 1994)

Incidence of melanoma in four English counties, 1989-92

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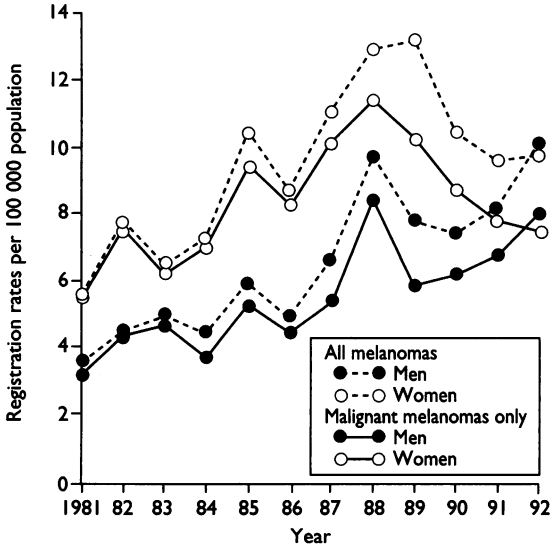
BMJ 1995;310:502-3

The age standardised incidence of malignant melanoma in England seems to have been increasing in both sexes by more than 5% a year from 1979 to 1988.[1] More recent data from the Scottish cancer registry suggest that incidence in women has not increased there since 1988.[2] Routine mortality data for England and Wales show no increase in the death rate from melanoma in women from 1989 to 1992, whereas for men it continued to rise. In view of the lack of national incidence data after 1988, we analysed registrations for malignant melanoma in a single regional registry from 1981 to 1992.

Methods and results

The Oxford Cancer Intelligence Unit collects and analyses information on a population of approximately 2·5 million people in Oxfordshire, Berkshire, Buckinghamshire, and Northamptonshire. The histological verification rate for melanomas is high at 96%. The completeness of melanoma registration was validated by using a variety of methods. Annual registration rates for malignant melanoma of the skin (*International Classification of Diseases*, ninth revision (ICD-9) code 172) for men and women were directly age standardised with the World Health Organisation's European standard population; 95% confidence intevals were calculated by a standard method.[3] Similar rates were calculated and analysed separately for carcinoma in situ of the skin (ICD-9 232) that were histologically confirmed as malignant melanoma.



Annual registration rate (age standardised) for melanoma of the skin within the Oxford Cancer Registry, 1981-92

In the period 1981-92, 2068 melanomas and 296 melanomas in situ were registered. The figure shows that for men annual registration rates for melanoma (ICD-9 172 only) increased over this period, with an additional peak in 1988. In women, however, the increase from 1981 to 1988 was followed by a fall in the registration rate from 11·41 (95% confidence interval 9·5 to 13·3) per 100 000 in 1988 to 7·53 (6·0 to 9·0) in 1992. The proportion of melanomas that were registered as in situ increased from 1985 to 1992 ($P=0·09$, χ^2 test for linear trend, both sexes combined). This increase was more obvious in women than men. When melanomas in situ were analysed together with other melanomas, the annual registration rates for women still showed a decline after 1989 that was not seen in men.

Comment

The year on year increase in the incidence of melanoma up to 1988 has not continued beyond that year in women, at least in the area covered by the Oxford Cancer Intelligence Unit. This reversal of trend is unlikely to be artefactual as a change in ascertainment levels over time would not produce such a trend only in women.

Exposure to the ultraviolet radiation in sunlight is the most important known risk factor for melanoma.[4] Healthy attitudes to sun exposure are becoming more common, particularly among women and those in higher social classes (G B Hastings and D R Eadie, unpublished data). Melanoma registration rates may be falling in women because they have been more receptive than men to health promotion messages. The increasing proportion of in situ melanomas suggests that both sexes are presenting earlier with these cancers.

There is evidence that public health campaigns give rise to a short term increase in the apparent incidence of melanoma.[5] The rise in incidence before 1988 in both sexes was probably partly the result of campaigns that took place mainly in 1987. A preliminary examination of registrations for 1993 suggests that the decline in melanoma in women from 1988 to 1992 is about to be partially reversed, presumably as a result of greater public and professional awareness of skin cancers because of the current Health of the Nation initiative. Fortunately, the additional cancers registered in 1993 seem to include many in situ and thin malignant