

The clinical characteristics of Asian and Caucasian patients on Bradford's Low Vision Register

S Pardhan¹ and I Mahomed²

Abstract

Aim To analyse the clinical characteristics of patients on the Bradford Low Vision Register with regards to the type (partially sighted or blind), sex, race, causes and age at registration.

Methods All the data were obtained from the Morley Street Resource Centre, which keeps records of all registrations in the Bradford Metropolitan District. Information including postcode, date of birth, age, gender, ethnic group, degree, date of registration, cause of registration and age at registration were entered into a database.

Results Of all registrations, 64% were blind and 36% were partially sighted. Asians were younger at registration and there were a significantly lower number of females compared to Caucasians. When data were analysed for the different age groups, in the older group of over 65 years, Asians showed significantly more diabetic retinopathy (26.1%) compared to Asians (7.8%), while Caucasians demonstrated significantly more glaucoma (C: 29.3%; A: 17.4%). In the younger age group (<30 years), the leading causes for Asians were retinitis pigmentosa and nystagmus while for Caucasians it was congenital cataracts and optic atrophy. The proportion of Asians registered was significantly lower than expected from the projected population estimates in Bradford. **Conclusions** The study indicates significant differences in the clinical profiles of the two racial groups. The data do not follow the predictions from published population estimates, with Asians, especially females, being under-represented in the register.

Eye (2002) 16, 572–576. doi:10.1038/sj.eye.6700164

Keywords: low vision; race; Asian; Caucasian; profile; blind

Introduction

South Asians make up a large majority of the ethnic minority in the UK. The main aim of the study was to profile clinical characteristics of Asian and Caucasian patients on the low vision register in Bradford in terms of gender ratio, age at registration and leading causes of blindness and partial sight. It is appreciated that these data will not reflect the exact demographics of low vision patients in Bradford and will only represent those who are registered. Given that Bradford has a large population of Asians and the fact that this has increased in the last decade, it is valuable to profile the characteristics of Asian as compared to Caucasian patients.

Materials and methods

All the data were obtained from the Morley Street Resource Centre, which keeps records of all blind and partially sighted registrations in the Bradford Metropolitan District. Information including postcode, date of birth, age, gender, ethnic group, degree, date of registration, cause of registration and age at registration were entered, while other details such as name and income were kept confidential.

Results

As at June 1999, the Bradford low vision register consisted of 2884 patients of whom 63.9% were registered blind and 36.1% registered partially sighted (Table 1). The ratio of females to males was approximately 1:1.44.

Composition of different age groups

Blind register The subjects were grouped according to age. The 'older group' is defined

¹Department of Optometry and Ophthalmic Dispensing Anglia Polytechnic University Cambridge CB1 1PT, UK

²Department of Ophthalmology Bradford Royal Infirmary Bradford BD9 6RJ, UK

Correspondence: Professor S Pardhan Dept of Optometry Anglia Polytechnic University East Road Cambridge CB1 1PT, UK Tel: 01123 363271 ext 2257 Fax: 01223 417712 E-mail: s.pardhan@apu.ac.uk

Table 1 Demographics of all subjects

Total	Blind	Partially sighted
Percentage	63.9%	36.1%
Gender ratio	f: 59%; m: 41%	f: 58.4%; m: 41.6%
Racial mix	A: 7.5%; C: 92.2%; Other: 0.3%	A: 10.9%; C: 88.6%; Other: 0.5%

Table 2. Percentage representation of the two races

	Caucasian		Asian	
	> 65 years	<30 years	> 65 years	<30 years
Blind	68.25%	11.8%	20.86.5%	38.1%
Partially-sighted	60.67%	12.6%	11.40%	57.9%

as 65 years or older and the 'younger group' as those under 30 years. Table 2 shows the percentage representation of the two races for the different age groups. Older Caucasians constitute nearly three-quarters of all blind and partially sighted Caucasian registrations. Older Asians, on the other hand, comprise just one fifth of all blind Asian registrations and just one tenth of all the partially sighted Asian registrations. A different picture is seen for the younger group. Young Caucasians registered blind or partially sighted comprise less than an eighth of the total Caucasian registrations while young Asians make up over a third of the Asian blind register and over half of the Asian partially sighted register.

Racial mix

Blind register Figure 1 shows the ratios of registered Caucasians/Asians for the different age groups. There

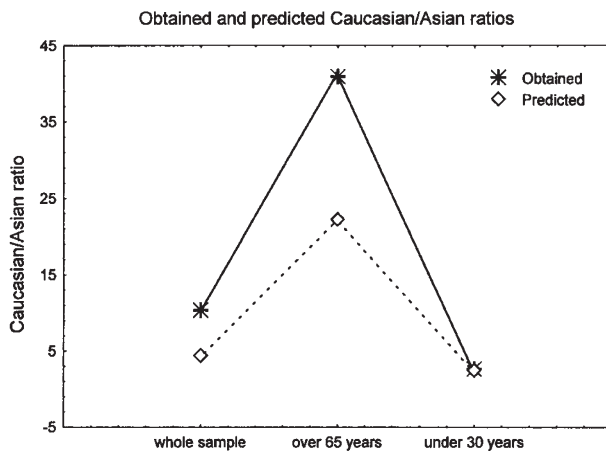


Figure 1 The ratios of registered Caucasians/Asians for the different age groups. The predicted ratio from the Corporate Services for Bradford City Hall, Population forecast is also shown. There is a significant under-representation of older Asians on the register.

were 39.95 times more blind Caucasians than Asians in the older group compared to the younger group where the ratio was much lower at 3.79 times. Population forecast estimates for the year 1999 were obtained from the CBMDC (Corporate Services for Bradford City Hall, Population forecast, 1996).¹ The distribution of the different races in Bradford in 1999 was 79.42% Caucasians, 17.89% Asians, 1.28% Afro-Caribbean and 1.41% others. Figure 1 illustrates the predicted ratio of the Asian to Caucasian population demonstrating a significant under-representation of older Asians on the register. In the younger group, this is not the case, possibly indicating a greater acceptance of registration in the younger Asian population.

Gender mix

Blind register Figure 2 shows the female/male ratios for the different groups. There are 1.52 Caucasian females and 0.72 Asian females to every male. In the older Caucasian group, there are more females than males with a female/male ratio of 1.82. In the older Asian group, an opposite trend is shown with more males than females with a female/male ratio of 0.86. In the younger Caucasian group a ratio of 0.88 was shown while the Asian group showed a much lower ratio of 0.58 indicating nearly twice as many males as females registered. Figure 2 also gives the predicted

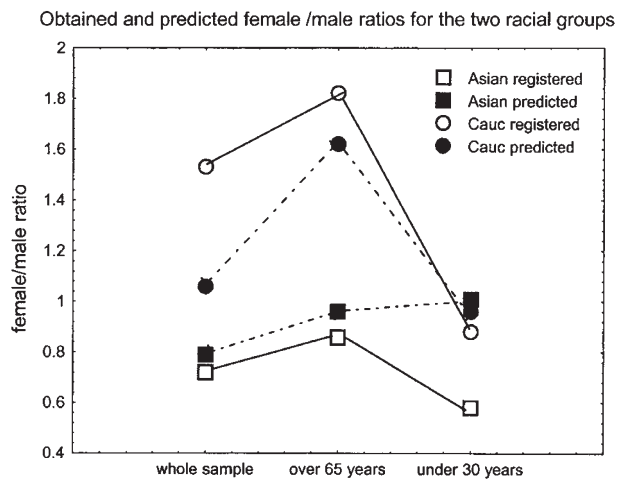


Figure 2 The obtained and the predicted female/male ratios for the different groups. Asian females are significantly under-represented especially in the younger group.

ratios of females/males based on the projected estimates of the population in Bradford. As seen, Asian females are under represented, especially in the younger age group. In the Caucasian group, females are over represented, more so in the older group.

Age at registration

Figure 3 shows the median age at registration. Marked differences in registration exist in the two racial groups (Figure 3). In the whole sample, the registration age is younger for the Asian sample with the median age for the Caucasian group being 2.17 times older than for the Asian group. This trend was shown in both the older group (C: 79 years; A: 74 years) and in the younger group (C: 15 years; A: 8 years).

Leading causes for registration

We compared the leading causes of registration in older and younger age groups. For blind patients registered after the age of 65 years, the leading causes of blindness are as shown in Figure 4. Although for both the racial groups the leading causes are macular degeneration, glaucoma and diabetic retinopathy, the relative contribution by each is significantly different. There was approximately 3.34 times more diabetic retinopathy in Asians compared to Caucasians. On the other hand, there was 1.68 times more glaucoma in Caucasians than in Asians. Figure 5 shows the leading causes for younger subjects which demonstrates more nystagmus and retinitis pigmentosa in Asians compared to Caucasians.

For the partially sighted, the three known leading causes for partial sightedness in the older Caucasian sample were macular degeneration (35.67%), glaucoma (21.11%) and diabetic retinopathy (9.70%). In the Asian

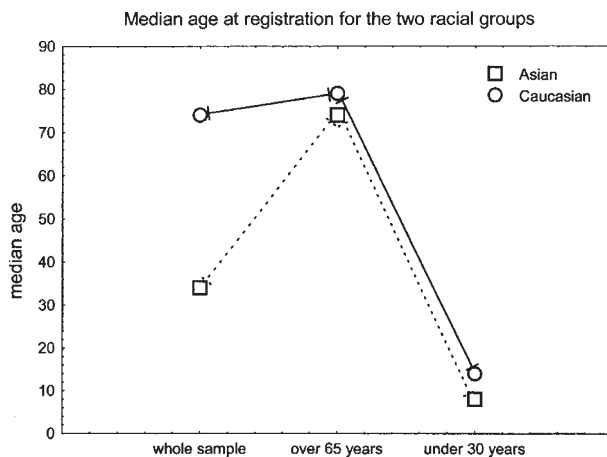
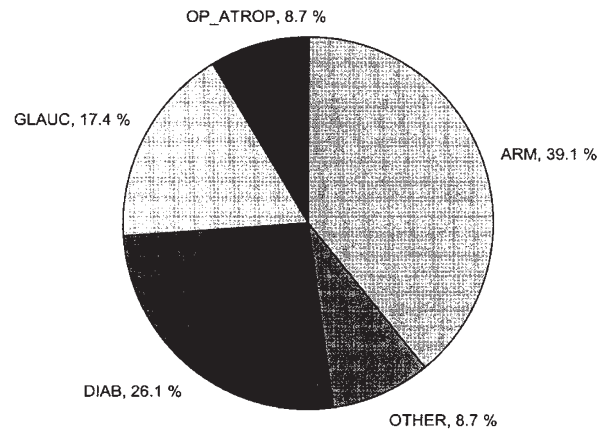


Figure 3 The median age at registration.

Causes of blindness in Asians aged 65 years+



Causes of blindness in Caucasians aged 65 years +

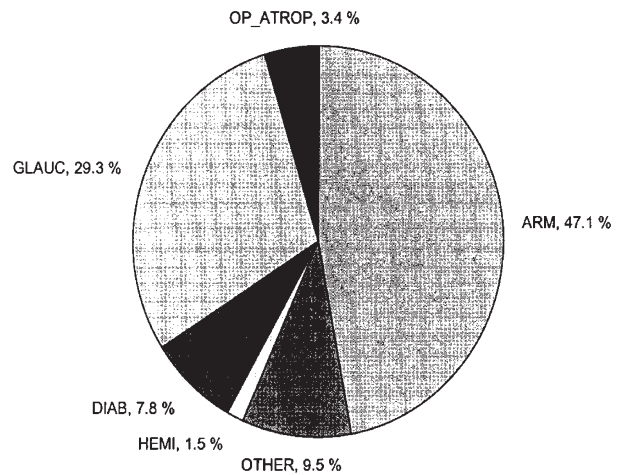


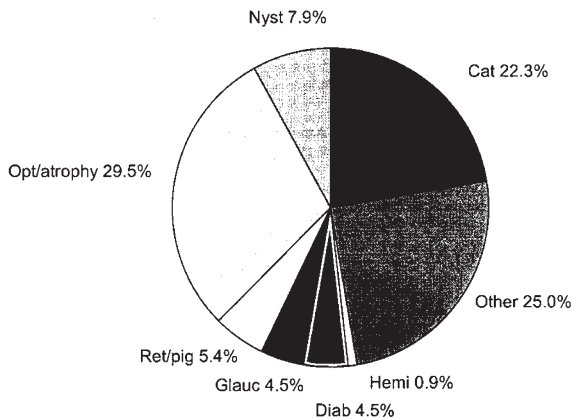
Figure 4 The leading causes of blindness for older (65 years and above) Asians and Caucasians.

population, the leading causes were diabetic retinopathy (55.55%) and macular degeneration (11.11%). In the younger Caucasian group, the three leading causes were nystagmus (28.6%), cataract (23.8%) and optic atrophy (21.9%) while in the Asian sample they were nystagmus (35.6%), retinitis pigmentosa (10%) and cataract (8.5%).

Discussion

The western world does not suffer from a shortage of ophthalmological care but this does not necessarily

Causes of blindness in Caucasians aged 30 years or under



Causes of blindness in Asians aged 30 years or under

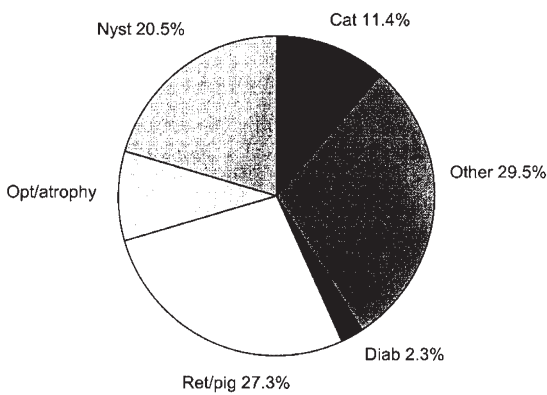


Figure 5 The leading causes of blindness for younger (30 years and under) Asians and Caucasians.

ensure that all patients receive it. It is estimated that only a small proportion of people who are visually impaired (ie registrable) actually register. Various reasons are given for people not registering. Elderly patients perhaps do not realise that their visual ability is declining, or they just put it down to old age.² People may be unaware of the benefits of being registered while others may not wish to be labelled or do not want to receive what they see as charity. Others may fear job loss and so attempt to keep their disability secret.

It is documented that the distribution of visually impaired people tends to skew towards older age groups.³ Although our Caucasian group showed this, the Asian sample did not, most probably due to the fact that the Asian population in Bradford is relatively young and that the elderly may have more inhibitions in registering. The ONS estimate that patients over the

age of 75 years account for 70% of the total number of visually impaired people and therefore a disproportionate number of females fall within this group. The population estimates for Bradford show a similar ratio for females and males (1: 1.0003) in the over 75 years Asian population. This was not shown in the registration profile where there were 25% more males registered.

The leading causes of visual impairment in older patients (over 65 years) are macular degeneration and glaucoma.⁴ Our data showed this with the Caucasian group but not the Asian group who demonstrated significantly higher frequency of diabetic retinopathy. It is well known that some ethnic groups are more prone to particular diseases. For example, Afro-Caribbean people are more likely to develop glaucoma than their Caucasian counterparts in the UK, while Asians have a higher risk of developing age-related cataract and exhibit a higher prevalence of diabetes.

Bradford registration statistics show a lower percentage (52%) of older patients over 70 years registered compared to other figures in the literature. For example, the proportion of registered patients over the age of 70 years varies between 55–66%.^{5–8} It is appreciated that registration does not indicate the real proportion of those visually disabled. Robinson⁹ estimated that the actual number of persons who were eligible to be registered as blind or partially sighted in the UK was four times the number who were officially registered. Eligible people may remain unregistered because of the emotive connotations associated with the 'blindness' label or because of the lack of available services in rural areas. Under representation of immigrants and native people could also be due to language and cultural barriers. Further study is needed to evaluate the possible reasons for the shortfall in the Asian community. It is certainly not due to the fact that they enjoy better ocular health than their Caucasian counterparts.¹⁰

Acknowledgements

We wish to thank Ian Buchanan and Jack Taylor for transferring the data to an Excel format. We also thank Morley Centre for their support.

References

- 1 CBMDC Corporate Services: Population Forecast for Bradford District 1981–2011. *Population by Age, Sex and Ethnic Groups*. City Hall, 1996.
- 2 Dickinson C. *Low Vision: Principles and Practice*. Butterworth-Heinemann: Oxford, 1998.
- 3 Bruce I, McKennell A, Walker E. *Blind and Partially Sighted Adults in Britain: the RNIB Survey*. HMSO: London, 1991.

- 4 Evans J. *Causes of Blindness and Partial Sight in England and Wales 1990–1991. Studies on Medical and Population Subjects*. HMSO: London, 1995, p 57.
- 5 Jackson AJ, Silver JH, Archer DB. An evaluation and follow up systems in two low vision clinics in the United Kingdom. In: Woo GC (ed). *Low Vision: Principles and Applications*. Springer-Verlag: New York, 1986, pp 396–417.
- 6 Hill AR, Cameron A. Pathology characteristics and optical correction of 900 low vision patients. In: Woo GC (ed). *Low Vision: Principles and Applications*. Springer-Verlag: New York, 1986, pp 362–385.
- 7 Leat SJ, Rumney NJ. The experience of a University-based low vision clinic. *Ophthalm Physiol Opt* 1990; **10**: 8–15.
- 8 Elliott DB, Trukolo-Ilic M, Strong JG, Pace R, Plotkin A, Bevers P. Demographic characteristics of the vision disabled elderly. *Invest Ophthalmol Vis Sci* 1997; **38**: 2566–2575.
- 9 Robinson JR. A survey of blind and partially sighted adults in Britain. *J Vis Impairment Blind* 1993; **87**: 78–79.
- 10 Ritch AES, Ehtisham M, Guthrie S, Talbot JM, Luck M, Tinsley RN. Ethnic influence on health and dependency of elderly inner city residents. *J Royal Col Phys London* 1996; **30**: 215–220.