

## Letter to the Editor

### Etiology of visual impairment in the United Arab Emirates: a hospital-based study

Sir,

We were interested to read the paper by Khandekar and Al Harby entitled "National Register for the Blind: a tool for health programme management" [1]. We have carried out a prospective study of 174 patients to identify the causes of visual impairment in patients attending the ophthalmology clinic at Al-Baraha Hospital, Dubai, United Arab Emirates (UAE) between August 1998 and July 2002. Our study was undertaken by a single investigator who applied the World Health Organization (WHO) Prevention of Blindness eye examination record protocol for blindness and low vision [2]. It comprised: demographic details (e.g. name, age, sex and country of origin), best corrected visual acuity (VA), basic eye examination, history of previous eye surgery, cause of low vision or blindness and the immediate action required. Patients with refractive error as their principle cause of reduced vision were excluded. WHO defines blindness (binocular) as VA < 3/60 in the better eye with best possible correction. The definition of low vision (binocular) is VA < 6/18 to  $\geq$  3/60 in the better eye with best possible correction. In patients with multiple aetiologies, we adhered to the WHO convention of defining the principle cause of visual impairment as the disorder which is most easily treatable. Eyes with monocular VA  $\geq$  6/18 were excluded.

The mean age of patients was 52.9 years (standard deviation 18.5). Males were 61.5%. The majority who were classified as having visual impairment (blindness and low vision) were > 40 years of age (Table 1). Bilateral blindness was seen in

25 cases (14.4%), with 3.4% attributed to cataract. Unilateral blindness was seen in 69 (39.7%), and posterior segment disorders represented the primary aetiology in 10.3% of cases (Table 2). Binocular low vision was recorded in 39 cases (22.4%), and cataract was still the main cause in 21 (12.0%) (Table 2). Unilateral low vision affected 71 (40.8%), caused predominantly by cataract (25 cases, 15.5%) (Table 2). Age-related cataract was the major type of cataract causing visual impairment in this study (69/174 cases, 39.6%). Cataract extraction was predicted to improve VA to normal or near normal levels in almost all eyes affected. However, vision was unlikely to be improved in 3 eyes due to concomitant pathology.

Corneal opacification (traumatic, infectious or other) constituted one-fifth of visual impairment. Trachoma was an uncommon cause of visual impairment (9 cases, 5.2%). The rate of primary glaucoma was similar to that of corneal opacities in our study group. Primary glaucoma was the second most

Table 1 Distribution of blindness and low vision by age and sex ( $n = 174$ )<sup>a</sup>

Type of vision loss	Females		Males	
	$\leq 40$ years No.	$> 40$ years No.	$\leq 40$ years No.	$> 40$ years No.
<i>Blindness</i>				
Binocular	0	12	4	9
Unilateral	1	22	12	34
<i>Low vision</i>				
Binocular	1	22	3	13
Unilateral	2	19	12	38

<sup>a</sup>Some patients with normal vision in 1 eye and low vision/blind in the other eye, or low vision in 1 eye and blind in the other eye.

**Table 2 Causes of blindness and low vision (n = 174)<sup>a</sup>**

Principal disorder	Binocular		Unilateral	
	No.	%	No.	%
<i>Blindness</i>				
Cataract	6	3.4	15	8.6
Amblyopia	0	0	2	1.0
Primary glaucoma	4	2.3	14	8.0
Posterior segment disorders	3	1.7	18	10.3
Corneal opacity	6	3.4	16	9.2
Uncorrected aphakia	5	2.9	2	1.0
Anterior uveitis	1	0.6	2	1.0
Other				
<i>Low vision</i>				
Cataract	21	12.0	27	15.5
Amblyopia	2	1.0	9	5.2
Amblyopia	3	1.7	12	6.9
Primary glaucoma	3	1.7	13	7.5
Posterior segment disorders	4	2.3	9	5.2
Corneal opacity	6	3.4	1	0.6
Uncorrected aphakia	0	0	0	0
Anterior uveitis	6	3.4	15	8.6
Other	0	0	2	1.0

<sup>a</sup>Some patients with normal vision in 1 eye and low vision/blind in the other eye, or low vision in 1 eye and blind in the other eye.

common cause of blindness in Turkmenistan [3]. By contrast, in developed countries, studies have shown primary glaucoma not to be a major cause of blindness [4,5].

Our study highlights the magnitude of treatable/preventable blindness present in Al-Baraha hospital in the United Arab Emirates. The most common cause of visual impairment was cataract. In developing countries such as Tanzania [6], Turkmenistan [3], Nigeria [7] and Jordan [8], and some developed countries, such as the United States of America (USA) [9,10] and Australia [11], cataract is the leading cause of blindness [12].

Posterior segment disorders were relatively common (37 cases, 21.3%) in our study population. Other studies have shown it to be more common: Tanzania [6], USA [9,10], Australia [13] and France [14]. The cultural norms of the United Arab Emirates mean that women often remain housebound. This may explain the higher predominance of males in our sample.

In conclusion, in this hospital-based study, cataract was the most common cause of both blindness and low vision as defined by WHO. Data such as ours could provide baseline information for cataract intervention programmes and facilitate adequate planning and future monitoring of these. This study highlights the high incidence of visual impairment due to potentially easily treatable sight-depriving conditions.

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