Prevalence of visual deficits among young men in Jordan

Wafed Ramadan, MD, PTO(USA). Wafa M. Asfour, Bch, MD.

ABSTRACT

Objective: To report the pattern of various causes of decreased visual acuity (VA), within the age group of young (18-25 years) healthy adults in Jordan.

Methods: We carried out this retrospective study on the records of 16550 candidates examined from June 2004 to June 2005 by the Medical Committee of Employment, Royal Medical Services in Amman, Jordan. All candidates received an ophthalmic examination as well as medical and ENT examination. We divided the candidates with visual acuity of less than 6/12 in either eye into 3 groups.

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Results: The most important cause of decreased VA in the 18-25 years age group was refractive errors followed by amblyopia, which represents the major ophthalmic cause of employment rejection in a wide range of occupations in adult life.

Conclusion: This study emphasize the need for early visual screening for refractive errors and anisometropic amblyopia in early primary schools, and every effort must be made to achieve the best possible acuity in young patients with amblyopia.

Many studies in developing countries, have allocated data on blindness and visual impairment in the elderly and in children, according to the World Health Organization (WHO) worldwide, there are an estimated 45 million people that are blind with additional 135 million individual visually impaired. Legal blindness is defined by the WHO as best corrected visual acuity in the better eye of less than 0.05 (3/60) or a visual field of 10 degrees or less. Data on the prevalence and severity of visual impairment in Jordan are scarce; based on studies from other countries show prevalence of visual impairment to be between 5% and 50%. Unrecognized visual impairment not only represents a missed chance for adequate treatment, but may also adversely affect development, social behavior and training.

Amblyopia is a handicap when seeking employment and it is the most common visual disability in children, early treatment is thought to be more effective, and therefore factors affecting the age at presentation are important. Our study aims to report the main causes of visual deficits in Jordan.

Methods. This is a retrospective study based on all records of candidates presented to the Medical Committee of Employment, Royal Medical Services in Amman, Jordan between the periods of 15 June 2004 - 15 June 2005. In order to report, the pattern of various causes of decreased vision (VA) within the age group of healthy young men (18-25 years) in Jordan.

The candidates came from all over Jordan population; rural and urban areas, they were all

From the Eye Specialist, King Hussein Medical Center, Amman, Jordan.

Received 6th July 2005. Accepted for publication in final form 18th October 2005.

Address correspondence and reprint request to: Dr. Wafa Asfour, Eye Specialist, King Hussein Medical Center, PO Box 3433, Amman 11181, Jordan. Tel. +962 (6) 5850778. E-mail: wlafasfour@hotmail.com

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healthy young males of high school and college graduates; age range was 18-25 years old. All candidates filled a specially prepared questionnaire, medical information and past medical history of the candidate and his family were examined by the Ophthalmology, ENT, and Family Physician specialists. To exclude other medical problems: routine laboratory investigations, and chest x-ray, were also performed. The records of all candidates, rejected by the comity for visual impairment was studied for demographic data, VA, and causes of decreased vision. The ophthalmic examination by Ophthalmologist included: a VA examination by the Snellen E chart and with a light torch to examine the eyes externally. For candidates with VA of less than 6/18; a pinhole VA test was performed and when there was no improvement, the candidate was send to the nearby eye clinic. There full ophthalmic examination with slit lamp, direct and indirect ophthalmoscopes was performed to exclude corneal, lens, and retinal causes of decreased vision. Candidates with refractive errors were referred to an optometrists were proper spectacles were prescribed. The records of candidates with VA of less than 6/12 in either eye were divided into 3 groups; group 1 with VA < 6/12 in one or both eyes; group 2 with VA of less than 6/36 in one or both eyes; and group 3 VA of 6/60 or less in one or both eyes.

Files of candidates rejected by the medical comity for causes other than decreased vision were neglected, while all files of candidates rejected due to decreased vision were studied and divided according to the recorded VA, and causes of visual impairment.

Results. Out of the applying candidates, only 257 (1.55%) candidates were rejected for decreased VA. There were 194 candidates in group 1, and the cause of their decreased vision was refractive errors that were corrected with glasses. While group 2 consisted of 41 candidates and the main cause of their decreased vision was due to amblyopia in 20 (48.8%) of them, as for group 3 there was only 22 candidates, and the 2 main causes of the visual impairment were amblyopia in 50% and ocular traumas in 31.8%.

As for these candidates with amblyopia, approximately 80% of them had anisometric amblyopia, while 20% were due to either, strabismic amblyopia, early childhood ocular traumas, or unilateral congenital cataract. Other important causes of decreased vision in group 3 were high myopia, keratoconus, and squint (Table 1).

Discussion. This study was carried out on a large number of young Jordanian male populations from various parts all over the country. There are considerable socioeconomic variations within urban and rural areas of Jordan and thus, a variation in the distribution of various causes of decreased visual acuity might be expected.

The Royal Medical Services and Ministry of Health (MOH) of Jordan are providing efficient medical care all over the country, the MOH has a school health care project including ophthalmic examination for all primary classes, and it supplies free spectacles to all those with correctable refractive errors. Social deprivation might be associated with later presentation of amblyopia, particularly of anisometric amblyopia, a relationship between social deprivation and access to health care and screening services is well known. If screening for anisometric amblyopia is to be undertaken, priority should be given to screening children from areas of social deprivation in rural parts of the country. The Royal Jordanian Medical Facility/Royal Medical Services conducted 3

Table 1 - Causes of impaired vision in group 2 and 3.

<table>
<thead>
<tr>
<th>Causes of impaired vision</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amblyopia</td>
<td>31</td>
</tr>
<tr>
<td>Old trauma</td>
<td>9</td>
</tr>
<tr>
<td>High myopia</td>
<td>8</td>
</tr>
<tr>
<td>Keratoconus</td>
<td>7</td>
</tr>
<tr>
<td>Squint</td>
<td>3</td>
</tr>
<tr>
<td>Congenital cataract</td>
<td>2</td>
</tr>
<tr>
<td>Congenital anomaly</td>
<td>2</td>
</tr>
<tr>
<td>Retinal lesions</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2 - Some job exclusion in visual impairment.

<table>
<thead>
<tr>
<th>Vision in worse eye with correction</th>
<th>Job excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 6/60</td>
<td>Catering department, Hospital cleaning and laundry staff, some laborers, etc.</td>
</tr>
<tr>
<td>6/60- 6/36</td>
<td>Clerk, secretaries. General public transport, and private drivers Large goods vehicle drivers Police and security officers</td>
</tr>
<tr>
<td>&lt;6/18</td>
<td>Commercial pilots: Air-flight personnel (engineers, navigators, air traffic controllers, etc.)</td>
</tr>
<tr>
<td>&lt;6/12</td>
<td>Royal Air Force: navigators, aircrew, etc. Army regiments</td>
</tr>
<tr>
<td>&gt;6/9 with minimum 6/6 VA in right eye is specified</td>
<td>Royal Navy and Marines regiments</td>
</tr>
<tr>
<td>&gt;6/5 in both eyes</td>
<td>Air Force Pilots</td>
</tr>
</tbody>
</table>
previous surveys, in cooperation with an American Medical Team for surveys; they were carried on to school children in the north east, north, and south deserts of Jordan. They concluded that only 3.1% presented with VA <6/12, and only one quarter of them failed to improve with correction due to ocular diseases, and that 2% had correctable VA deficits (80% of them were unaware of it, 13% were aware but did not want to use glasses, and only 0.7% were wearing proper glasses).

This study is the first to be conducted on the 18-25 years age group in Jordan and it revealed that the most important causes of decreased VA were refractive errors followed by amblyopia; the second most common cause of visual impairment and of which represents the major ophthalmic cause of employment rejection in certain jobs such those shown in Table 2. The third most common cause of visual impairment was childhood ocular traumas, ocular injuries were significantly more common among boys than girls with a ratio of 2.7:1, quarreling and playing were considered the most common cause of eye injuries in children, while welding was the most common type of work accidents that resulted in eye injuries in adults.

A similar study carried out by Sorsby et al. on army recruits aged 17-27 years in 1960 (one of the few and historically best known studies in the world on refractive errors), it showed that only approximately 3.6% had high refractive errors (1.6% had high hypermetropia, 1% high myopia, and approximately 1% with high astigmatism).

Childhood blindness and visual impairment is one of the most important priorities in the WHO vision 2020 program. Children at secondary school age should be provided with information or education about eye care, including the need for satisfactory visual acuity for driving, for their future careers, as well as the need to check the color vision if they have specified career ambitions. Patients with amblyopia are debarred from a wide range of jobs, which increases with severity of amblyopia. Candidates in group I can still be accepted in various civil jobs where their vision can be corrected with eye glasses and therefore can perform well in such jobs; while candidates in group 2 and 3 were rejected from a wide range of jobs.

This study emphasize the need of early visual screening for refractive errors and anisometric amblyopia in primary schools, and every effort must be made to achieve the best possible acuity in young patients with amblyopia. We hope that assessments of all children with serious unilateral visual impairment by a district multidisciplinary team are on the way of being implemented.

References