



**The Frequency Of Visual Impairment In  
Children Attending The Out- Patient  
Clinic Of Ain Shams University Hospital  
Due To Different Ocular Conditions**

*thesis*

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Ophthalmology*

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لمستشفى جامعة عين شمس بسبب أمراض العيون المختلفة  
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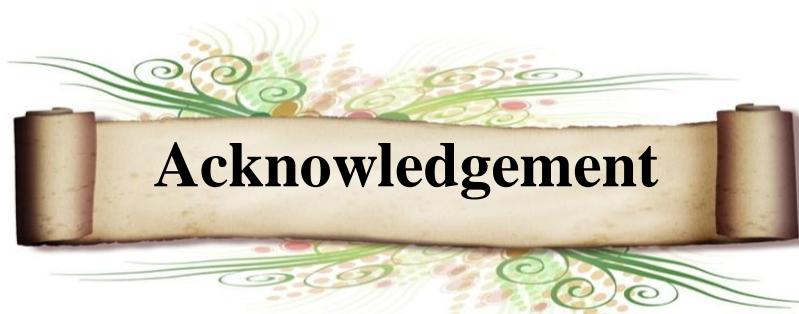
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قالوا

سبحانك لا علم لنا  
إلا ما علمتنا إنك أنت  
العليم العظيم

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*First thanks to **ALLAH** to whom I relate any success in achieving any work in my life .*

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## List of Abbreviations

<b>1ry</b>	Primary
<b>2ry</b>	Secondary
<b>3rd</b>	Third
<b>BL</b>	Blind
<b>BSV</b>	Binocular Single Vision
<b>C/D</b>	Cup/Disc Ratio
<b>D</b>	Diopter
<b>D.Cyl.</b>	Diopter Cylinder
<b>D.Sph</b>	Diopter Sphere
<b>e.g.</b>	Example
<b>hge.</b>	Hemorrhage
<b>IOFB</b>	Intraocular Foreign Body
<b>IOP</b>	Intraocular Pressure
<b>IPD</b>	Interpupillary Distance
<b>MPC</b>	Mucopurulent Conjunctivitis
<b>POAG</b>	Primary Open Angle Glaucoma
<b>RD</b>	Retinal Detachment
<b>ROP</b>	Retinopathy Of Prematurity
<b>RPE</b>	Retinal Pigment Epithelium
<b>SD</b>	Spherical Diopter
<b>SE</b>	Spherical Equivalent
<b>Sec.</b>	Seconds
<b>SVI</b>	Severe Visual Impairment
<b>WHO</b>	World Health Organization

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## Abstract

Childhood vision disorders are prevalent and are a significant public health problem. Early identification, diagnosis and correction of children's vision disorders are essential parts of all child health programs. The early detection and treatment of vision disorders give the visual system and brain an opportunity to develop normally by preventing permanent vision loss; thus giving children a better opportunity to develop educationally, socially and emotionally.

A study of the patterns of ocular diseases in children is very important because, while some eye conditions are just causes of ocular morbidity, others invariably lead to blindness. Also while some conditions such as refractive errors and cataract are treatable others like measles and vitamin A deficiency are largely preventable.

There are few data available on the prevalence and types of refractive errors, strabismus, amblyopia, lens-related visual impairment and ocular malformation in children in developing countries. Therefore, the magnitude of the problem needs a systematic assessment. That, early ocular assessment of children can facilitate correction of ocular morbidity of the victims.

Visual impairment is a major public health concern. In order to help nations combat visual impairment, it is important to determine the specific aetiologies by region.

This will enable each nation to better understand its specific needs, and better ensure that appropriate resources are efficiently allocated for prevention and treatment.

We conducted this study to determine avoidable causes of childhood blindness and visual impairment so that a nationwide intervention can be planned.

403 children had been included in this study aged 4 to 14 years, 175 (43%) were males while 228 (57%) were females children.

Once a child was enrolled full detailed history had been taken, medical history, presence of other disabilities, previous eye surgery and eye examination was performed, including: visual acuity, pupils, extraocular motility, intraocular pressure with Goldmann applanation tonometer as necessary, anterior segment examination by handheld light or slit lamp and dilation of eyes for cycloplegic refraction by retinoscopy and Fundoscopic examination with a direct or indirect ophthalmoscope. For dilation, cyclopentolate hydrochloride 1% was instilled in all children.

We found that 66 children (16.50% of the total 403 children) were visually impaired (had best corrected visual

acuity less than 6/18). While the other 337 children (83.50%) had normal vision (BCVA between 6/6 and 6/18).

Of those 66 visual impaired children, refractive errors were the major cause of the impairment (41 children 62% of total impaired children) then amblyopia (10 children=15%) and strabismus (6 children= 9%) and other causes such as cataract, trauma, trachoma and congenital issues (9 children=14%).

In the other hand, we found that 30% of the studied children had eye diseases. The most important eye diseases were refractive errors 105 (26.25%) of overall 403 participated children, ocular surface diseases 57 (14.25%), amblyopia 20 (5%), strabismus 11 (2.75%), congenital anomalies 4 (1%), lens-related visual impairment 2 (0.75%) and other different ocular diseases 12 (3%) including blepharitis, chalazion, sty, lid ptosis.

All eye diseases were more common in low socioeconomic families. The most important significant risk factors were previous eye diseases, no early consultation for eye diseases, never received eye examination, low level of parental occupation, sibling(s) with eye diseases, last birth order child and female sex.

## **Introduction**

Good vision is the key to a child's physical development, success in school and overall well-being. The vision system is not fully formed in babies and young children, and equal input from both eyes is necessary for the brain's vision centers to develop normally. If a young child's eye can not send clear images to the brain, his vision may become limited in ways that cannot be corrected later in life. But if problems are detected early, it is usually possible to treat them effectively (*Naidoo et al, 2012*).

Refractive error (RE) as: (myopia, hypermetropia and astigmatism) affect the whole spectrum of the population irrespective of age, gender, race and ethnic group. Such RE can be easily diagnosed, measured and corrected with glasses or other refractive corrections to attain normal vision. Uncorrected or under corrected RE have severe consequences for the individual, family and society. Previously significant attention has not been given to the contribution of refractive errors to global cause of visual impairment and blindness. This resulted from the realization that previous global estimates of blindness and visual impairment have underestimated the contribution of RE, because many definitions of blindness have been based on best-corrected distance visual acuity (*Egbe et al, 2010*).

Childhood vision disorders are prevalent and are a significant public health problem. Early identification, diagnosis and correction of children's vision disorders are essential parts of all child health programs. The early detection and treatment of vision disorders give the visual system and brain an opportunity to develop normally by preventing permanent vision loss; thus giving children a better opportunity to develop educationally, socially and emotionally (*Marshall et al, 2010*).

Variety of specific functions of the eye and the neurological control of these functions, such as eye teaming (binocularity), fine eye movements (important for efficient reading), and accommodation (focusing amplitude, accuracy and flexibility). Deficits of functional visual skills can cause blurred or double vision, eye strain and headaches that can affect learning. Convergence insufficiency is a specific type of functional vision problem that affects the ability of the two eyes to stay accurately and comfortably aligned during reading (*Murphy and Heiting, 2010*).

A study of the pattern of ocular diseases in children is very important because, while some eye conditions are just causes of ocular morbidity, others invariably lead to blindness. Also while some conditions such as refractive errors and cataract are treatable others like measles and vitamin A deficiency are largely preventable. (*Deshpande et al.,2011*)