



## The Patterns of Eye diseases in Children under five years presenting to *Makkah* Eye Complex Khartoum state Sudan

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### Abstract

*This is cross sectional hospital based study aimed to evaluate the patterns of eye diseases in children under five years and identify the associated of socio- demographic and medical factors for ocular morbidities & blindness. Two hundred fifty children under five year were including in the study. The study was conducted in outpatient clinic of Makkah eye complex in Khartoum state from September (2010) up to February (2011). Two hundred fifty children were enrolled in the study. The questionnaires include personal data, history, physical examination and treatment options emphasis on eye was performed. The study showed male predominance (54.4%) constituted the bulk group and neonate was the least. The majority of patients from the urban area (58.8%) most of them among low to moderate socioeconomic status (99.6%). a total of (33) different types of eye diseases were found. Cataract was the most prevalent (20.4%) followed by conjunctivitis (16.8%), vernal kerato conjunctivitis VKC (12.4%), squint (10%), naso lacrimal duct obstruction NLDO (7.6%), glaucoma (6.0%), corneal ulcer (4.8%), retractive error (4.4%) and blindness represent (0.8%) Table-2. The study showed there is strong association between cataract and eye trauma, also trauma was more common in older age and male children. Allergic conjunctivitis is major conjunctival disease and glaucoma is the leading cause of visual impairment blindness represent (0.8%), most commonly is preventable, but this may be under estimated and true estimation could be determined by community based study. we concluded that most common cause of childhood ocular morbidity is cataract also there association between cataract and eye trauma in under five years also there is association between eye infection in neonatal period and NLDO supplementation of vitamin A is benefit. Glucoma, is the leading cause for blindness.*

**Keywords:** Socio-Demographic, Ocular Morbidity, Cataract, Conjunctivitis, Glaucoma and Blindness.

### Introduction

Eyes are the organs in human body that detect and convert them to electromagnetic impulses forming images on our and enabling us to see, although we tend to take them for granted. The temporary eye problems we face in everyday life make us more sensitive towards the vital function they play. Fortunately, a large number of these eye problems are momentary and treatment, even if you don't have vision insurance, it's generally a good idea to have a yearly consultation to catch serious problems in their early stages, however, a doctor should be consulted for any problem that has complications or persists for longer than a few days.

Control of blindness in children is considered a high priority within the World Health Organization (WHO) vision (2020) initiative. There are several reasons for this firstly the child, who was born blind or becomes blind in early life and survives, is doomed with the associated emotional, social and economic draw back to the child, family and the society. Secondly up to (80%) of the causes of blindness in children are either preventable or treatable if detected early<sup>1</sup>. Therefore control of blindness in children is closely related to child survival.

Eye examination and visual assessment are vital for detection of condition that results in blindness, significantly serious systemic diseases and lead to problems with school performance<sup>2</sup>.

### Materials and Methods

**Ethical clearance:** Verbal consent was obtained from care givers of children with eye diseases. This will be reassured that all information related to their child will remain top secret. Written approval was being obtained from hospital administrators.

**Study design:** Descriptive cross-sectional, hospital-based study, was conducted in the outpatients clinic refer of *Makkah* Eye Complex in Khartoum state from September (2010) up to February (2011).

**Study population:** Two hundred fifty children under five year were including in the study. A detailed questionnaire which include the history, physical examination and treatment options done by the ophthalmologist and optometrist in the refer clinic. Material used and procedures done by ophthalmologist and optometrist include torch direct ophthalmoscope red balls and toys of different colors, senllen card and slit lamp. Examination

of visual acuity. Light reflex pupillary reaction and reflex visual field and squint covering test.

**Data analysis:** Data was statistically analyzed using (SPSS) statistical package for social sciences. All values were express as (means  $\pm$ SD). The students-t test was used for the evaluation of differences between groups. The differences were considered significant if a *P* value was less than 0.05.

## Results and Discussion

Eye evaluating of children under five years is conducted in many countries under varying names such as amblyopia screening program 2006,<sup>3,4</sup> developmental checks for children<sup>5</sup>, and strabismus detection in children of kindergarten<sup>6</sup>, however, the aim of such screening is common to detect children with defective visual function and intervene at earliest to improve their quality of life, but also because of the potential to develop amblyopia in the event of visual impairment<sup>7</sup>, regional such same study was conducted in Pakistan at Khyber Teaching Hospital, Peshawar in Eye Department for three years duration first of January 2005, including patients with eye diseases, male (60.93%), conjunctivitis was the most common disease affecting (35.6%), followed by refractive errors (12.77%), lens disorders accounted (11.69%) and ocular motility was affected in (8.06%). Needed medical treatment represent (69.6%), required surgery (27.66%) and (12.30%) required glasses and orthoptic correction<sup>8</sup>.

In this study males predominant (54.6%) females (45.4%), in current study cataract is the most common disorders seen (20.4%) followed by conjunctivitis (16.8%) VKC (12.4%), SQUINT (10%), NLDO (7.6), Glaucoma (6.0%), corneal ulcer (4.8%), refractive error (4.4) blindness represents (0.8%) Table-1. These different results in gender and frequency, distribution, can be explained by the fact that there was different environment in other study might have played role. Cataract was found in (8.1%) of less than five years old patients assumed to be congenital, also such as an international conducted study in this area similar results were found in Brazil where they found that (58) cases represented (82.9%) were considered congenital and (12) cases represented (17.1%) developmental. Allergic causes reported in urban area (79.3%) and this may be an under estimation because the study was a hospital based and the allergy can be contributed to environment. Eye injuries remain the major cause of unilateral visual impairment worldwide and a common cause non congenital unilateral blindness<sup>9</sup>. Corneal scarring account for (75%) of childhood blindness in Africa, with half of these cases involving in a history of measles shortly before blindness<sup>5</sup>.

In this study corneal infections constituted more than one-third of the infections of the eye and adnexa are particularly notorious for causing blinding corneal scars.

Eye disorders due to vitamin A deficiency represent (0.4%), this

may be due to vitamin A supplementation program which routinely done during the vaccination program.

**Table-1**  
**The possible cause of eye diseases**

Possible cause	Frequency	Percent	Valid percent
Inflammation	55	22.0	22.5
Trauma	40	16.0	16.4
Congenital	100	40.0	41.0
Nutritional	2	0.8	0.8
Allergic	29	11.6	11.9
Other	18	7.2	7.4
Missing system	6	2.4	2.4
Total	250	100.0	100.0

**Table-2**  
**The other causes of eye disease**

Possible cause	Frequency	Percent	Valid percent
cataract	51	20.4%	20.4%
conjunctivitis	42	16.8%	16.8%
Vernal kerato conjunctivitis (VKC)	31	12.4%	12.4%
Squint	25	10.0%	10.0%
NLDO	19	7.6%	7.6%
Glaucoma	15	6.0%	6.0%
Corneal ulcer	12	4.8%	6.0%
Refractive error	11	4.4%	4.4%
Blindness	02	0.8%	0.8%
Others	42	18.0%	18.0%
Total	250	100%	100%

## Conclusion

We concluded that most common causes of childhood ocular morbidity in this study were cataract followed by conjunctivitis. Allergic conjunctivitis (VKC) was the major conjunctively disease. There was strong association between trauma and

cataract. Glaucoma was the leading causes of visual impairment.

**Recommendation:** All children who are found to have an ocular a abnormality should be referred earlier to pediatric ophthalmologist ocular infections are preventable but challenging causes of blindness particularly in neonate must be treated a accurately. Regular vitamin A supplementation should be encouraged with vaccination schedule. School health regular vision check should be done.

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