



### Ocular Disease at Lere Local Government Outreach Post in Kaduna State of Northern Nigeria.

*Maladies oculaires dans le district de Lere dans l'état de Kaduna, Nord du Nigeria.*

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#### ABSTRACT

**OBJECTIVE:** The aim of the study was to analyse the ocular diseases that were seen at the outreach post.

**Patients and Methods:** Data on 883 patients was collected from records of patients starting from January 2005 to August 2005 at the Saminaka outreach eye clinic. Information on age, sex occupation, visual acuity was analysed in addition to data on diagnosis of presenting condition after a full ocular examination.

**RESULTS:** Out of 883 patients seen, 397 (45%) were female and 486 (55%) were male. The patients seen consisted of 258 (29%) children between the ages of 1 day to 14 years old. And adults made up 625 (70.7%) of the patient population. The data for analysis of diagnosis was available for only 680(77%) of the total patients seen within this period. Bacterial conjunctivitis was the most commonly occurring condition at (23.3%) of the total followed by cataracts constituting (16.3%) of all diagnoses. This was closely followed by vernal and allergic conjunctivitis making up 11.6% and 11.3% respectively. Other conditions of note included refractive errors which made up 4.1% and consisted mainly of presbyopes with only two myopes, ophthalmia neonatorum (3.8%), keratitis 3.8% and blunt trauma making up 3.4%.

**CONCLUSION:** Preventable and curable eye conditions were the main conditions found at the outreach post. WAJM 2007; 26 (1): 20 – 23.

**Keywords:** Bacterial conjunctivitis, Ocular diseases, rural community, outreach post.

#### RESUMÉ

**Objectif:** Le but de cet étude était d'analyser les maladies oculaires examinées à un poste de santé.

**Méthodes:** Les données sur 883 patients obtenues du registre des patients de Janvier 2005 à Aout 2005 de la station ophtamologique de Saminaka. Des informations telles que l'âge, le sex, fonction, l'acuté visuelle étaient analysées, ajouter à ceux ci des données diagnostiques après un examen oculaire complet. **Résultats:** Parmi les 883 patients examinés, 397 (45%), étaient des femmes, 486 (55%) étaient des hommes. De ces patients, 258 (29%) étaient des enfants de 1 à 14 ans. 625 (70.7%) adultes constituaient la majorité des patients. Les données disponibles pour l'analyse provenaient de 680(77%) patients. La conjonctivite bactérienne était la plus commune (23.3%), la cataracte constituait (16.3%), suivi par la conjonctivite vernale et allergique tous deux avec une prévalence de 11.6% et de 11.3% respectivement. D'autres conditions comprenaient des erreurs refractives ayant une prévalence de 4.1% et constitue principalement des prebyopie et seulement deux cas de myopie, l'ophtalmie neonatorum (3.8%), kératite 3.8% et le traumatisme aigu avec 3.4%.

**Conclusion:** Les maladies oculaires prévenables et curables étaient les plus communes au poste de santé ophtamologique. WAJM 2007; 26 (1): 20 – 23.

**Mots Clés:** conjonctivite bactérienne, maladies oculaires, communauté rurale, poste de santé.

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## INTRODUCTION

Data from developed nations show ocular conditions to be mainly due to aging and degenerative disease. Studies at the Orleans Regional Hospital serving a semi-rural area in France<sup>1</sup> have shown the leading causes of visual impairment to be macular degeneration (4%), diabetic retinopathy (16.6%), and cataracts (13.3%).

In rural areas of African countries such as Mali<sup>2</sup>, studies in the Segou district have found cataracts to be the most commonly presenting cause of visual loss (54%) followed by trauma (43%) followed by glaucoma and xerophthalmia. A similar picture has also been demonstrated in East Africa<sup>3</sup> where ocular conditions identified included presbyopia (48%), allergic conjunctivitis (20%), early cataracts (9%), and infective conjunctivitis (8%). In rural Lesotho<sup>4</sup> the most common ocular conditions encountered on examination of ophthalmic clinic patients showed bacterial conjunctivitis, refractive errors, vernal conjunctivitis, senile cataracts, glaucoma, corneal opacities and trauma in this order to be commonly occurring. In southern rural Togo<sup>5</sup>, studies have shown the main ocular diseases to be cataracts, glaucoma and corneal opacities in this order.

In Nigeria studies in the south by Nwosu<sup>6</sup> found cataracts (33.3%), refractive errors (19.5%), glaucoma (15.5%), and infective keratoconjunctivitis (7%) to be causes of visual impairment, while Fafowora and Osuntokun<sup>7</sup> at Ibadan demonstrated cataracts, age related macular degeneration and glaucoma to be main cause of blindness and low vision in the population resulting in presentation at eye care centres.

The aim of the study was to describe and document the ocular diseases presenting at the Saminaka outreach post in the Northern part of Nigeria.

## MATERIALS AND METHODS

This was a descriptive study of 883 consecutive patients seen at the Saminaka General Hospital outreach eye clinic in the North Central part of Nigeria starting from 3<sup>rd</sup> January 2005 to 1<sup>st</sup> August 2005. Data analysed was collected from the register

of daily entries in the eye clinic. Saminaka outreach eye clinic is situated within the Saminaka general hospital and is in Lere Local Government Area one of the local governments covered by the Guinness Ophthalmic Unit of the Ahmadu Bello University Teaching Hospital Shika under sponsorship by the Sight Savers International. It is situated in Kaduna state of northern Nigeria.

The outreach eye clinic is manned by two ophthalmic nurses and the ophthalmologists from the tertiary institution who visit every four weeks to run clinics and who also carry out eye camps every three months between rotations of the other local government outreach eye clinics under their care.

Patients are seen on a daily basis by the resident ophthalmic nurses who take a history of the patients' complaints and then proceed to do a clinical eye examination consisting of visual acuity measurement using a Snellen's chart, anterior segment examination with a pentorch. Dilated funduscopy was done where necessary with an ophthalmoscope and intraocular pressure measurement carried out using a Shöitz applanation tonometer.

Extracapsular cataract extraction with insertion of posterior chamber intraocular lens (ECCE & PCIOL) is performed during the eye camps organised by the visiting ophthalmologists and follow up visits are also part of the services provided.

Complete data on diagnosis was available for 680 (77%) of registered patients. Reasons given for inadequate entries by the ophthalmic nurses was as a result of very busy clinics on which days sometimes it was omitted to fill in the final diagnosis even though all other demographic information was collected and filled in the register. Data for sex and age status of patients was complete. Data was double entered into Epi data version 6.0b software and analysed using STATA statistical software.

## RESULTS

Out of 883 patients seen, 397 (45%) were female and 486 (55%) were male. The age range included children from a day old to adults over eighty years old. The patients seen consisted of 258

(29%) children between the ages of 1 day to 14 years old. Adults made up 625 (70.7%) of the patient population. Complete data for analysis including diagnosis were available for only 680 (77%) of the total patients seen within this period (See Table 1). This data showed bacterial conjunctivitis to be the most common condition seen at 23.3% of the total, followed by cataracts constituting 16.3 % of the total. This was closely

**Table 1: Distribution of Ocular Conditions**

Diagnosis	Frequency	
	Number	%
<b>Lid Disorders</b>		
Blepharitis	3	0.4
Tarsal Foreign Bodies	3	0.4
Lid Laceration	3	0.4
Lid growths	8	1.2
Cellulitis	2	0.3
<b>Sclera</b>		
Scleritis	2	0.3
<b>Conjunctival disorders</b>		
Ophthalmia Neonatorum	25	3.8
Bacterial Conjunctivitis	159	23.3
Vernal conjunctivitis	79	11.6
Allergic Conjunctivitis	77	11.3
Conjunctival Growths	17	2.5
Chemical burns	3	0.4
Blunt trauma	23	3.4
Dacrocystitis	1	0.1
Keratomalacia	1	0.1
<b>Corneal disorders</b>		
Refractive Error	28	4.1
Corneal Foreign Bodies	27	4.0
Moorens Ulcer	2	0.3
Corneal Ulcer (other)	11	1.6
Corneal Opacity	10	1.5
Penetrating Trauma	6	0.9
Trachoma	12	1.8
Keratitis	25	3.8
<b>Lenticular disorders</b>		
Cataract	111	16.3
Complications from Couching	1	0.1
<b>Uvea</b>		
Uveitis	2	0.3
Iritis	13	1.9
<b>Retinal and optic nerve disorders</b>		
Retinitis Pigmentosa	3	0.4
Diabetic Retinopathy	3	0.4
Hypertensive Retinopathy	1	0.1
Optic Neuropathy	6	0.9
<b>Miscellaneous Ocular Disorders</b>		
Herpes Zoster Ophthalmicus	1	0.1
Painful blind eye	6	0.9
Panophthalmitis	1	0.1
Glaucoma	5	0.7
<b>Total</b>	<b>680</b>	<b>100</b>

followed by vernal and allergic conjunctivitis which accounted for 11.6% and 11.3% respectively. Other conditions of note included refractive errors which made up 4.1% and consisted mainly of presbyopes and two myopes, ophthalmia neonatorum (3.8%), keratitis (3.8%) and blunt trauma making up 3.4%.

Conjunctival growths accounted for 2.5% and consisted of mostly pingueculae and few pterygia. Blunt

trauma as referred to described mainly cases of subconjunctival hemorrhage and one case of hyphaema. Lid growths were found in 8(1.2%) of cases and were mainly stye and only one chalazion. Keratomalacia was found in only one case, so also were complications from couching and panophthalmitis. Penetrating trauma here referred to corneal lacerations. Cases of glaucoma and trachoma accounted for 0.7% and

1.8% respectively. Corneal opacities were mainly as a result of measles keratopathy accounting for 1.5% of cases.

Distribution of the different diagnosis according to sex and age is summarized in Table 2. Ophthalmia neonatorum was found mainly in the children making up 1.6% in males and 2.0% proportion in females. Bacterial conjunctivitis, the most common occurring condition was most common in

**Table 2: Distribution of Patients by Diagnosis, Sex and Age Group**

Diagnosis	Male		Female		Total					
	Adult	%	Child	%	Adult	%	Child	%	N	%
<b>Lid Disorders</b>										
Blepharitis	0	0.0	1	0.1	1	0.1	1	0.1	3	0.4
Tarsal Foreign Bodies	1	0.1	0	0.0	1	0.1	1	0.1	3	0.4
Lid Laceration	1	0.1	0	0.0	1	0.1	1	0.1	3	0.4
Lid growths	2	0.3	2	0.3	3	0.4	1	0.1	8	1.2
Cellulitis	0	0.0	1	0.1	0	0.0	1	0.1	2	0.3
<b>Scleral Disorders</b>										
Scleritis	0	0.0	1	0.1	0	0.0	1	0.1	2	0.3
<b>Conjunctival Disorders</b>										
Ophthalmia Neonatorum	0	0.0	11	1.6	0	0.0	14	2.0	25	3.8
Bacterial Conjunctivitis	39	5.7	32	4.7	65	9.5	23	3.3	159	23.3
Vernal conjunctivitis	3	0.4	37	5.4	4	0.6	35	5.1	79	11.6
Allergic Conjunctivitis	22	3.2	2	0.3	50	7.3	3	0.4	77	11.3
Conjunctival Growths	10	1.5	0	0.0	7	1.0	0	0.0	17	2.5
Chemical burns	3	0.4	0	0.0	0	0.0	0	0.0	3	0.4
Blunt trauma	12	1.8	6	0.9	1	0.1	4	0.6	23	3.4
Dacrocystitis	0	0.0	1	0.1	0	0.0	0	0.0	1	0.1
Keratomalacia	0	0.0	1	0.1	0	0.0	0	0.0	1	0.1
<b>Corneal Disorders</b>										
Refractive Error	18	2.6	1	0.1	9	1.3	0	0.0	28	4.1
Corneal Foreign Bodies	18	2.6	4	0.6	4	0.6	1	0.1	27	4.0
Moorens Ulcer	1	0.1	0	0.0	1	0.1	0	0.0	2	0.3
Corneal Ulcer (other)	8	1.1	0	0.0	2	0.3	1	0.1	11	1.6
Corneal Opacity	2	0.3	2	0.3	2	0.3	4	0.6	10	1.5
Penetrating Trauma	2	0.3	2	0.3	0	0.0	2	0.3	6	0.9
Trachoma	3	0.4	2	0.3	5	0.7	2	0.3	12	1.8
Keratitis	8	1.1	2	0.3	4	0.6	11	1.6	25	3.8
<b>Lenticular Disorders</b>										
Cataract	50	7.3	0	0.0	61	9.0	0	0.0	111	16.3
Complications from Couching	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1
<b>Uveal Disorders</b>										
Uveitis	2	0.3	0	0.0	0	0.0	0	0.0	2	0.3
Iritis	4	0.6	0	0.0	9	1.3	0	0.0	13	1.9
<b>Retinal and Optic Disorders</b>										
Retinitis Pigmentosa	2	0.3	0	0.0	0	0.0	1	0.1	3	0.4
Diabetic Retinopathy	1	0.1	0	0.0	2	0.3	0	0.0	3	0.4
Hypertensive Retinopathy	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1
Optic Neuropathy	4	0.6	0	0.0	2	0.3	0	0.0	6	0.9
<b>Miscellaneous Disorders</b>										
Herpes Zoster Ophthalmicus	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1
Painful blind eye	3	0.4	0	0.0	3	0.4	0	0.0	6	0.9
Panophthalmitis	0	0.0	0	0.0	1	0.1	0	0.0	1	0.1
Glaucoma	4	0.6	0	0.0	1	0.1	0	0.0	5	0.7
<b>Total</b>	<b>226</b>	<b>33.2</b>	<b>108</b>	<b>15.9</b>	<b>239</b>	<b>35.2</b>	<b>107</b>	<b>15.7</b>	<b>680</b>	<b>100</b>

adult females (9.5%) followed by adult males (5.7%), male children (4.7%) and then female children (3.3%). Cataracts were diagnosed only in adults, with an occurrence of 7.3% in males and 9.0% in females. Vernal conjunctivitis was more common in the child population with an equal distribution between the males and females at 5.4% and 5.1% respectively. Adults made up only 0.4% of the proportion in males and 0.6% females. These appeared to be mainly young adults in their twenties. Allergic conjunctivitis was practically non-existent in the children but most common in the female adult population at 7.3% compared to 3.2% of the total population. Conjunctival growths were found only in adults comprising 1.5% and 1.0% of male adults and female adults respectively. Chemical burns were rare (0.4%) and found only in male adults. Blunt trauma was more frequent in males making 1.8% of adult population and 0.9% of male child population. Dacrocystitis and keratomalacia were rare (0.1%) only being found in the male child population. Refractive errors were found mainly in adults, (2.6% ) male and (1.3%) of adult females. There were only two cases of Moorens ulcer, one each in the male and female adult group making (0.1%) each. Other ulcers of indeterminate origin were mostly in adult males and females, at (1.1%) and (0.3%) respectively. Corneal foreign bodies were more common in adults, (2.6% in males and 1.3% in females and 0.6% male children and no female children affected. Uveitis and iritis were infrequent with more iritis in female adults making up 1.3%. Corneal opacities were evenly distributed in the sample population comprising (0.3%) of adult males, females and male children while female children were more (0.6%) by a tiny margin. The same was the case for penetrating trauma with 0.3% in male adult and child population, the same in the female child population and no cases in the female adult population. Trachoma made up few of the cases diagnosed with (0.3%) in both male and female children and 0.4% and 0.7% male and female adults. About 1% of adult males had keratitis as against 0.3% male children and 0.6% adult females. The higher proportion was found in the female children at 1.6%. There was

only one case of complications due to couching for cataract.

#### DISCUSSION

Only 77% of diagnosis of the study population was available in the recorded data for analysis. This may have resulted in an under or overestimation of certain diagnosis. Information was available on the ages but not all references to age were specific. In some cases patients were referred to as adult or child. The definition of child used was of a patient less than 15yrs of age therefore the author categorised the patients into children aged one day to 14 years and adults from 15 years to over 80 years. This limited the ability to describe the disease distribution by age groups of five years each, which patterns may have been of interest.

Bacterial conjunctivitis was the most common occurring condition reported followed by maturity onset cataracts, both of which were closely followed by both vernal conjunctivitis in children and allergic conjunctivitis mainly occurring in the adult female population. A higher proportion of female adults had bacterial conjunctivitis, which may lead to speculations regarding cross infection among females and the reasons why. Studies have revealed that health education on personal and household hygiene reduced the incidence of transmission of trachoma such that the odds of reducing trachoma in the health education village were about twice that of the no intervention village<sup>8, 9</sup>. The minimal proportion of children reported as having refractive errors may be as a result of the lower numbers presenting in the clinic as against an actual low number.

A greater proportion of the male adult population were affected by chemical burns, corneal foreign bodies and blunt trauma to the eye. Similar results have been obtained in studies elsewhere in Africa where a study presenting five-year data on hospitalized ocular injuries in a rural region in Tanzania showed a total of 157 cases were recorded, of whom 69% were male<sup>10</sup>. Similarly in Burkina Faso a retrospective study conducted in the eye department of the National Hospital of Ouagadougou showed that ocular traumas represented 9.8% of the reasons for consultation in

the unit. 73% of the patients were male<sup>11</sup>. Low numbers of patients with keratomalacia, trachoma and complications due to couching may be a reflection of the regular eye services given.

#### CONCLUSION

It is concluded that preventable and curable eye conditions were the main conditions seen in this outreach post.

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