

*Full Length Research Paper*

# Cataract blindness in a Nigerian tertiary hospital- A one year review

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**Blindness negatively affects quality of life and leads to increased mortality. Available community based studies showed that three quarters of the causes of blindness majorly by cataract, is avoidable. This study was conducted so as to have hospital based data on cataract as a cause of blindness in University of Port Harcourt Teaching Hospital, (UPTH), Nigeria. The case records of all blind patients (visual acuity of less than 3/60 or corresponding visual field of less than 10<sup>0</sup> in the better eye with the best possible correction) presenting at the out patient clinic for year 2008 were reviewed. Of 214 patients, Cataract was responsible for about one third (n=82.38.3%). The age 40-60 years had the highest proportion of bilaterally cataract blind patients (40%). More males were bilaterally cataract blind (n=12.60%). Most bilaterally cataract blind patients lived in the rural areas (n=12.60%). The uptake of surgery was poorer among bilaterally cataract blind patients with only 30% (n=6) presenting for surgery. Cataract is a leading cause of blindness in the UPTH, Nigeria and is commoner in the older age group especially among males. The rural dwellers present late especially when bilaterally blind from cataract. Subsidizing the costs may improve the uptake of cataract surgery in our center.**

**Keywords:** Cataract, blindness, university of Port Harcourt teaching hospital, couching, uptake of surgery, visual acuity, hospital based study, mortality.

## INTRODUCTION

Blindness is a global problem, the socioeconomic impact of which does not only lead to the reduction of one's quality of life but also reduces ones' capabilities and usefulness in the family, community and nation at large. It has been estimated that about 4% of the world's population are blind - an estimated 314 million people. (Ophthalmology Times Europe, 2009). Ninety percent of the blind are found in the developing countries (Blindness, Poverty and development, IAPB/VISION 2020 publication, 2009) Blindness causes poverty and poverty causes blindness. The individual finds it difficult to find gainful employment and this leads to dependence on family members, the general society and on reliance on social welfare where available (Bradford, 2004).

Seventy-five to eighty percent of blindness is avoidable (Ajaiyeoba and Fasina, 2003) of which cataract is responsible for over half.

The magnitude of blind people in Africa is not known but in Nigeria it is estimated that there are 1,130,000 blind people aged over 40 years (4.2% prevalence of blindness) (Kyari et al., 2009). It is reported that 42 out of every 1000 adults aged 40 and above are blind. Overall 2 out of every 3 Nigerians are blinded by avoidable causes like cataract (The Nigerian National Blindness and Visual Impairment Survey-booklet of results, 2005-2007) Cataract is thus the leading cause of blindness. Currently 750,000 Nigerians are already blinded by cataract and an additional 200,000 become blind each year (Nigerian national blindness and visual impairment survey- booklet of results 2005-2007).

Cataract is a treatable disease but poor access to medical facilities, lack of awareness by the public of the impact of the disease and financial constraints are problems facing a cataract patient. There are about 486,000 adults in Nigeria who are in immediate need of cataract surgery (The Nigerian National Blindness and Visual Impairment Survey-booklets of results, 2005-2007).

Risk factors that predispose an individual to cataract are; (Schrader, 2004) age over 40 years, poorly

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controlled diabetes, smoking, use of steroids, trauma to the eye, positive family history, exposure to ultraviolet light from the sun and x-rays. Cataract is much more common as a person's age increases; however in developing countries the onset of cataract blindness can often be much earlier (Abdul et al., 2009). In the white Caucasian population, age-related macular degeneration is the leading cause of blindness accounting for 54.4% of the blind population while in the black population cataract and glaucoma together accounts for about 60% of blindness (The Eye Diseases Prevalence Research Group, 2004).

A study conducted by the Federal Ministry of Health of Ethiopia (FMOH) /National Committee for Prevalence of Blindness in Ethiopia showed that cataract was the leading cause of blindness causing 49.9% of that country's blindness. Other notable causes of blindness noticed in Ethiopia included; trachoma, other corneal opacities, refractive errors and glaucoma (Binyam T, Daily Monitor, 2008)

In the nation-wide survey of blindness and low vision among Nigerians of adults aged 40 years and above, found out that a good number had 'couching' (46.1% of all eyes that had procedures for treatment of cataract) of blinding cataract which is associated with complications (The Nigerian National Blindness and Visual Impairment Survey-booklet of results, 2005-2007). Most of the available population-based data on blindness from Nigeria have already established that blinding eye disease constitute a significant health problem (Nwosu, 2000; Omoni, 2005; Pedro-Egbe, 2007). There have been different studies done across the country in different communities which show that cataract is responsible for the majority of the blinding eye conditions in Nigeria.

A study conducted by Abdul and others in northern Nigeria in people above the age of 40 years showed that cataract was the commonest cause of blindness and the prevalence of cataract blindness was 1.8% (Abdul, 2009). Another study in the same area showed cataract blinding prevalence of 2.2% (Rabiu et al., 2007).

A study in south western Nigeria showed that cataract was the leading cause of blindness with a percentage of 37.5% and 50% of bilateral and unilateral blindness (Ajaiyeoba and Fasina, 2003). A hospital based study also carried out in Ibadan in 2003 showed that the majority of the blind populations were above 50 years and cataract the leading cause of bilateral (36%) and unilateral blindness (41%) (Oluleye et al., 2006). A study carried out in onchocercal endemic region of Anambra state, south eastern Nigeria, among individuals aged 50 and above showed that cataract was also the leading cause of blindness and was responsible for two-third of cases seen (Nwosu, 2000). A hospital based study carried out in a teaching hospital in the same area, also showed out of the 820 new patients seen over a 12 month period, 36 (14%) had bilateral blindness and 71(26.6%) had monocular blindness. In this study,

cataract was also found to be the leading cause of blindness causing 33.3% of bilateral blindness and 28.2% of monocular blindness (Nwosu, 1994) Another study done in the University of Benin outpatient eye clinic showed that cataract with 34.4% was the leading cause of bilateral blindness in that center (Omoti, 2004).

In the south south of Nigeria, an earlier study by Omoni in Andoni local government area in Rivers state, showed cataract was responsible for 55.6% of those blind in BE (Omoni, 2005), Wokoma and coworkers in the Abua area of the same state found that it was responsible for 66.7% of blindness in BE (Wokoma et al, 2008). Another study in Ahoada-East local government area in the same area showed that cataract with a prevalence of 50% was the leading cause of blindness (Pedro-Egbe et al., 2006).

Accessibility to service delivery is also an issue. Most cataract patients found in the remote rural area have little or no access to health care services. Most patients that cannot access proper medical care go to the traditional medical practitioner who is closer, more familiar, and more affordable to have the local method of cataract surgery done-couching. This technique can result in blindness when the lens capsule ruptures from overwhelming inflammation (Schrader, 2004). Conventional surgery is thereafter not always successful (Abdul, 2009; Pedro-Egbe et al., 2006)

There are only 2 government eye clinics in Rivers state as at the time of writing this paper (including UPTH) and both are located in Port Harcourt. Nigeria has inadequate eye care resources to cope with the backlog of cataract operations (The Nigerian National Blindness and Visual Impairment Survey-booklet of results, 2005-2007). The available poorly motivated and few ophthalmologists are lopsided in distribution leading to poor access to effective eye care.

Having established that cataract is a significant cause of blindness in the community in our area, figures in a hospital based study are also necessary to see the proportion of those who are blind from cataract in the area.

The aim of this study therefore is to establish the causes of blindness in the University of Port Harcourt teaching hospital, the proportion of patients who are blind from cataract, the treatment offered and its outcome and the demographics so that policy may be made that will reduce the number blind from avoidable causes.

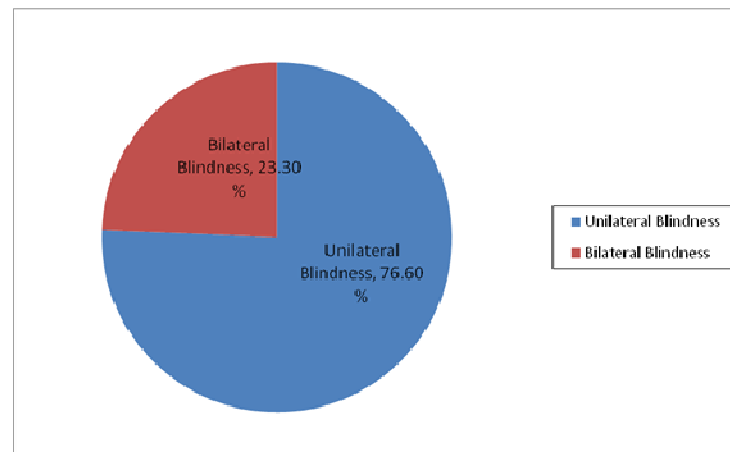
## MATERIALS AND METHODS

This study was a retrospective review of case records of all blind patients that presented in the outpatients unit of the ophthalmology department of the University of Port Harcourt teaching hospital (UPTH) over a one year period (Jan to Dec 2008) The UPTH is one of Nigeria's tertiary hospitals located in south south geopolitical zones of the country. Among other functions, UPTH serves as a referral center for other health facilities in the region. The study was approved by the UPTH management's ethics board.

The study population comprised of all blind patients that were

**Table 1.** Causes of blindness

Causes of Blindness	Monocular Blindness		Bilateral Blindness	
	Count	Percentage	Count	Percentage
Cataract	62	37.8%	20	40%
Glaucoma	46	28%	18	36%
Retinopathy	10	6.1%	4	8%
Panuveitis	10	6.1%	---	---
Aphakia	6	3.7%	---	---
Corneal laceration	10	6.1%	---	---
Corneal Opacity	4	2.4%	2	4%
Vitreous haemorrhage	4	2.4%	---	---
Refractive error	2	1.2%	---	---
Maculopathy-age related	6	3.7%	4	8%
Tumour	4	2.4%	2	4%
Total	164		50	

**Figure 1.** Pie chart – Distribution of blindness

seen in the outpatient clinic of the Ophthalmology department of the teaching hospital between 1<sup>st</sup> of January to 31<sup>st</sup> December, 2008.

Blindness was defined as having a visual acuity of less than 3/60 or corresponding visual field of less than 10<sup>0</sup> in the better eye with the best possible correction (Bradford, 2004) Records of all patients diagnosed with unocular or bilateral blinding conditions, with particular reference to cataract as the cause were accessed from the log book of the eye clinic. All patients with best corrected visual acuity better than 3/60 was excluded. Information such as age, sex, occupation, ethnicity, education, place of residence and religion were retrieved retrospectively from folders of out patients attending for the first time who were found to be blind. The causes of blindness and the treatment offered were also retrieved. Information obtained from the data sheet was analyzed manually and presented in tables. Summary statistics, simple frequencies and cross tabulations were computed.

## RESULTS

The number of blind people that visited the ophthalmology outpatient clinic of University of Port Harcourt Teaching Hospital (UPTH) was 214 in the year

2008 under review. Cataract was responsible for 82 (38.3%) cases. See Table 1.

### Proportion of blindness due to cataract

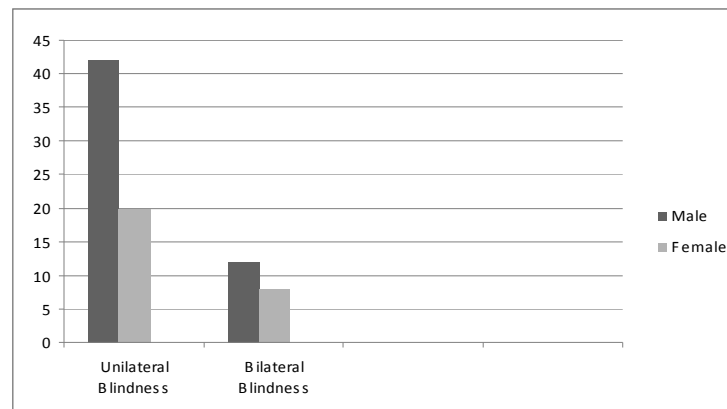
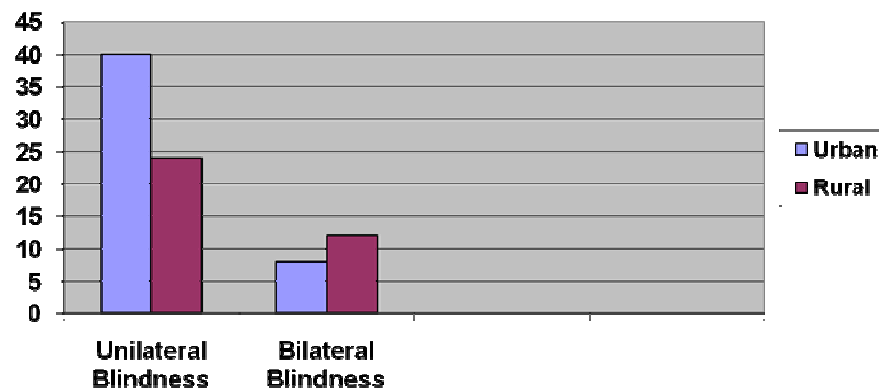
Cataract was responsible for 37.8% (n=62) of people with unilateral blindness and 40% (n=20) of people with bilateral blindness. Prevalence of unocular cataract blindness was calculated to be 378 per 1000 blind people while prevalence of bilateral cataract blindness was 400 per 1000 blind people. Out of the 214 people that presented with blindness, 164 (76.6%) had unocular blindness and 50 (23.3%) had bilateral blindness. See Figure 1

### Age distribution of cataract blindness

The highest occurrence of unocular cataract blindness was found within the age group of 40-60 years (46.9%)

**Table 2.** Age group Distribution of cataract blindness

Age Group	No of Unilateral Cataract Blindness	No of Bilateral Cataract Blindness
>80 years	4	4
61 to 80 years	14	6
41 to 60 years	30	8
21 to 40 years	10	0
1 to 20 years	6	0
< 1 year	0	2

**Figure 2.** Gender distribution of unilateral and bilateral blindness**Figure 3.** Urban and rural distribution of unilateral and bilateral cataract blindness

and the highest occurrence of bilateral cataract blindness was found within the age group of 40-60 years (40%). Two cases of congenital bilateral cataract were found in children below one year. See Table 2.

#### Sex distribution of cataract blindness

Out of the 62 people with unocular blindness, 20 (32.3%) were female and 42 (67.7%) were males. For those bilaterally blind, 8 (40%) were females while 12 (60%) were males. See Figure 2.

#### Place of residence

Out of the total number of people with cataract blindness, people with unocular blindness were found to reside more in the urban areas i.e. 40 (62.5%) and 24 (37.5%) in the rural areas, while people with bilateral blindness were found to reside more in the rural areas i.e. 12 (60%) and those residing in the urban areas were 8 (40%). See Figure 3.

### Treatment offered and uptake

Out of the total number of people with cataract blindness only 20 people (32.2%) with unilateral cataract and 6 people (30%) with bilateral cataract presented for surgery and implantation of intra ocular lens to help in improving their vision.

Fourteen of those blind in BE (70%) were not seen after diagnosis was made.

### DISCUSSION

From our study in the ophthalmology clinic in the University of Port Harcourt teaching hospital in the year 2008, the commonest cause of blindness is cataract. Cataract is responsible for 37.8% of monocular blindness and 40% bilateral blindness. The other major causes of blindness noticed were glaucoma and age related macular degeneration. This study is comparable to other studies that were carried out in the University Teaching Hospital, Benin (Omoti, 2004) and Nnamdi Azikiwe University Teaching Hospital (Nwosu, 1999) where cataract was responsible for 34.4% of those blind in BE. It also correlates with community based studies carried out in the riverine communities (Omoni, 2005; Pedro-Egbe, 2006). But this finding is in contrast to what was seen in a survey carried out in the United states of America where age related macular degeneration (54.4%) was responsible for blindness in the Caucasians (The Eye Diseases Prevalence Research Group, 2004).

From our study, we also noticed that the prevalence of cataract blindness was also high in the age group 41-60 years and 46.9% (about half) of the patients with monocular and 40% of patients with bilateral cataract blindness were found in this age group. This is due to the fact that cataract is an age related disease and it is found to be more prevalent as the population ages. This study is comparable to the study carried out by Fasina and Ajaiyeoba (2003) in south western Nigeria where blindness was noticed in the population above 45 years. Our study, however, differs from that carried out by Oluleye and coworkers (2006) in University College Hospital, Ibadan where the highest prevalence was rather found in the age group between 60-79 years. The study by Fasina and Ajaiyeoba (2003) also showed that the prevalence in males is higher than in females which we also noticed in our study where the male prevalence was 67.7% of unilateral blindness and 60% of bilateral blindness. This gender difference may be genetic or because men work more outdoors than women. It could also be because men are more financially independent and can access healthcare more readily than women. This trend was also noticed by the study carried out by workers in Ahoada community, Rivers state where the sex specific prevalence for males was 4.5% compared to

the female prevalence of 1.3% (Pedro-Egbe et al., 2006).

When the place of residence of these patients was considered, we found out that more people from Port Harcourt and its environs presented with monocular blindness (62.5%) while most of the patients from the rural areas presented when they were completely blind (60%). This corresponds with a study by the Federal Ministry of Health, Ethiopia which showed that most of the people visually impaired were from the rural areas than the cities (Binyam T-Daily Monitor, 2004)

From our study, after the diagnosis of cataract as causing the blinding eye condition was made, only about a third of the patients (32.2% of patients with monocular blindness and 30% of patients with bilateral blindness) came back for treatment. This can be attributed to the fact that most of the patients may not have been able to afford the surgery or came from far distances and when booked for later visits, there was nobody to bring them to the hospital for follow-up. This correlates with the study by Rabi and others where the cataract surgical coverage was 12.8% (Rabi et al., 2007). This was also the trend noticed by Nwosu in Anambra state where only 28.6% of the patients with cataract had undergone any form of surgery (Nwosu, 1994).

### CONCLUSION

From this study, it is evident that cataract is the leading cause of blindness worldwide including the University of Port Harcourt Teaching hospital, Nigeria. It is commoner in the older age group. And we found blindness rates to be higher in the male sex. Treatment of this blinding eye condition is inadequate at present as most do not come back to have the surgery once diagnosed. Lack of health facilities and few available ophthalmologists is responsible for inadequate establishment of eye clinics in localities outside Port Harcourt in Rivers state.

Awareness of cataract as a blinding eye condition should be made known to the public by the government and other health care bodies. Massive publicity campaigns should be carried out by non governmental bodies and health institutions and preventable measures should be related to the public to help slow down the rate at which cataract causes blindness e.g. The use of eye protections like sunglasses or hats that will help prevent ultraviolet rays from getting to the eyes.

Outreach campaigns should be carried out in the communities around the hospital and the state to encourage people to come early when they notices changes in their eye sight.

The costs of cataract surgery should be subsidized by the hospital, nongovernmental agencies and well meaning philanthropists to enable these patients cope as most of them are the breadwinner in their families and their families cannot cope with financial burden of surgery.

This will improve uptake of cataract surgery in the University of Port Harcourt teaching hospital.

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