

Cataract Surgical Outreach in a Tertiary Hospital in Nigeria: An Appraisal

Odarosa M Uhumwangho, Mieriumhe U Olowolaiyemo, Vivian B Osaguona, Adesuwa I Osahon

Department of Ophthalmology, University of Benin Teaching Hospital, Benin City, P.M.B. 1111, Nigeria

Corresponding author:

Odarosa M Uhumwangho,
Department of Ophthalmology,
University of Benin Teaching Hospital,
Benin City, P.M.B. 1111, Nigeria,
Tel: 2348051100633;
E-mail: odarosa.uhumwangho@uniben.edu

Abstract

Background: Cataract remains the main cause of reversible blindness in Nigeria. However, access to cataract surgery has been hampered by lack of funds and a dearth of eye care professionals. Surgical outreaches have been used as one of the tools to reduce the cataract backlog. **Aim:** To review a free cataract surgical outreach in a tertiary hospital funded by the Federal Government of Nigeria. **Subjects and Methods:** A three-day free cataract surgical outreach at the directive of the President of the Federal Republic of Nigeria, President Goodluck Jonathan was organised at the University of Benin Teaching Hospital (UBTH), Benin City. The records of all patients who had cataract surgery during the program were retrieved. The demographics, ocular assessment, surgical notes, post-operative and follow-up data were extracted and collated. Data was analysed using Microsoft Excel 2007 (Microsoft Corporation Inc, Washington, USA). **Results:** A total of 209 patients had cataract surgery made of 134/209 (64.1%) males and 75/209 (35.9%) females. The mean age of the patients was 61.8 (14.5) years (range 20 to 89 years). The majority of the patients, 137/209 (65.6%) were ≥ 60 years and 145/209 (69.4%) of the beneficiaries were low income earners. A total of 130/209 (62.2%) patients had never been seen by an eye care specialist. **Conclusion:** There is a great need to improve access to eye care services in general and cataract surgical services specifically.

Keywords: Cataract blindness, Cataract surgery, Surgical outreach

Introduction

Cataract accounts for about 50% of the 37 million blind in the world.^[1] In Nigeria, 42.9% of blindness is caused by cataract.^[2] A large number of the cataract blind have not had surgery although cataract surgery is relatively simple and cataract blindness is reversible.^[3] A traditional or ancient method of cataract surgery is couching. In this procedure, a sharp or blunt instrument is used to dislocate a cataractous lens, pushing it back into the posterior chamber of the eye.^[4] Some of the barriers to accessing conventional cataract surgery include inability to afford the surgery, lack of information on where surgery can be done, the ability to see with the other eye and the preference of traditional couching.^[5-7] In addition, maldistribution of skilled eye care practitioners has led to very low cataract surgical rates.^[5] However, cost of surgery remains one of the most significant barriers to the uptake of surgery.^[6-8]

Surgical outreaches have been employed as one of the tools to increase the cataract surgical output.^[9,10] In cataract surgical outreaches, large numbers of cataract surgeries are performed within a short duration which reduces cataract backlog. This study seeks to determine the socio-demographic profile characteristics of beneficiaries of a free cataract surgical outreach at the University of Benin Teaching Hospital (U.B.T.H.), Benin City, Nigeria.

Subjects and Methods

The University of Benin Teaching Hospital (U.B.T.H.) is a tertiary hospital located in Benin City, Edo State which was established

and funded by the Federal Government of Nigeria. U.B.T.H. is located in the South-south geopolitical region of Nigeria with a populace that predominantly practice Christian religion. It provides comprehensive eye care services to residents within Edo state and its neighbouring states. U.B.T.H. served as the base hospital for a three-day free cataract surgical outreach from 23rd to 25th April 2014, at the directive of the Federal Ministry of Health as part of the strategy by the Federal Government of Nigeria to reduce cataract blindness by increasing the cataract surgical rate in the country. Prior to the outreach, the public was informed about the upcoming program via announcements on television and radio stations within the state so that individuals could avail themselves of the opportunity. Those who presented for the outreach were screened for cataract and suitability for surgery. All surgeries were carried out as day cases without hospitalization. Health talks were given to all participants and those without ocular diseases were discharged while those with minor ocular diseases were treated. Those with other ophthalmic disorders were referred to the eye clinic for further management where appropriate. The screening forms of all patients who had cataract surgery during the program were retrieved. The demographics, ocular assessment, surgical notes and immediate post-operative data were extracted, collated and the data was analysed using Microsoft Excel 2007 (Microsoft Corporation

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

How to Cite this Article: Uhumwangho OM, Olowolaiyemo MU, Osaguona VB, Osahon AI. Cataract Surgical Outreach in a Tertiary Hospital in Nigeria: An Appraisal. *Ann Med Health Sci Res.* 2017;7: 111-114.

Inc, Washington, USA). Informed consent was obtained from the patients and the study conducted in accordance with ethical guidelines.

Results

A total of 864 persons were screened consisting of 598/864(69.2%) males and 266/864(30.8%) females. Cataract surgery (extracapsular cataract extraction) was performed in 209 patients made of 134/209(64.1%) males and 75/209(35.9%) females. No patient had bilateral surgery performed. The mean age of patients who had cataract surgery was 61.8(14.5) years, (range 21 to 89 years) with the highest proportion 137/209(59.0%) in the age group ≥ 60 years. A total of 67/209(32.1%) patients who had surgery were retirees (Tables 1 and 2) while 8/209(3.8%) patient's resident in other states also had cataract surgery. The surgeries were carried out by consultants and residents in training. Among the patients who had surgery, 130/209(62.2%) of them had never been seen by an eye care specialist. Forty-four out of 209 (21.1%) patients had bilateral mature cataract while 33/209(15.8%) patients were pseudophakic in one eye. The visual acuity in the operated eyes was hand movement (HM) in 109/209(52.2%) patients while 4/209(1.9%) patients had no light perception (NLP). This is presented in Table 3.

Most patients did not return for follow up appointments and were lost to follow up after one or two visits. Complications observed in the patients who had cataract surgery are presented in Table 4. Striate keratopathy was the commonest complication seen in 20/209(9.6%) patients. There was 1/209(0.5%) case of expulsive choroidal haemorrhage which occurred in a previously blind eye operated for cosmetic reasons. The patient was also a known hypertensive. Systemic conditions present in the patients who had surgery were diabetes mellitus alone in 11/209(5.3%), hypertension alone in 35/209(16.8%) while 14/209(6.7%) patients had both diabetes mellitus and hypertension and 1/209 (0.5%) was asthmatic.

Table 1: Age and Sex distribution of Patients who had Cataract surgery

'Age in years	Sex		Total (Percent)
	Male (%)	Female (%)	
20-39	13(6.2)	7(3.4)	20 (9.6)
40-59	33(15.8)	19(9)	52 (24.8)
≥ 60	88(42.1)	49(23.5)	137 (65.6)
Total	134 (64.1)	75 (35.9)	209 (100)

Table 2: Occupation of patients operated

Occupation	Number (Percent)
Retiree	67 (32.1)
Trader	33 (15.8)
Artisan	8 (3.8)
Farmer	16 (7.7)
Civil Servant	28 (13.4)
Business person	29 (13.9)
Unemployed	16 (7.7)
Driver	10 (4.8)
Student	2 (0.8)
Total	209 (100.0)

Table 3: Presenting Visual Acuity of eyes that had cataract surgery

Visual acuity	Number (Percent)
6/60	1(0.5)
Counting Fingers @ ≥ 1 m	39 (18.7)
Hand Movement	109 (52.2)
Light Perception	55 (26.3)
No Light Perception	4 (1.9)
Total	209 (100)

Table 4: Complications in cataract surgery

Complication	Number (Percent)
IOL subluxation	6 (2.9)
Vitritis	16 (7.6)
Hyphaema	4 (1.9)
Iridodialysis	3 (1.4)
Uveal prolapsed	3 (1.4)
Striate keratopathy	20 (9.7)
Pupillary membrane	2 (1.0)
PC rent	16 (7.6)
Post-op uveitis	1 (0.5)
Corneal opacity	1 (0.5)
Aphakia	3 (1.4)
Retinal detachment	1 (0.5)
Pupil block	1 (0.5)
Expulsive choroidal haemorrhage*	1 (0.5)

*This occurred in an eye with no light perception

Discussion

Cataract is a significant cause of ocular morbidity in Nigeria.^[2] About a quarter of the patients screened had mature cataracts and 18.0% of those operated were bilaterally blind from cataracts. A total of 137 (65.6%) of the patients were in the elderly age group being ≥ 60 years and above. Thus, majority of the cataracts were age-related. Two hundred and nine cataract surgeries were performed within the outreach period. The major promoting factor for was the fact that the scheme was totally free of direct cost to the patient. Prior to this program, the cataract surgical rate had been poor and this may have been attributed mainly to lack of funds as many of the patients were retirees, artisans and petty traders^[5,7-13] All the operated eyes were blind according to WHO definition of blindness with visual acuity $< 3/60$.^[14] Most of the eyes with good prognosis for visual recovery, that is, that were not NLP, that had cataract surgery had visual acuities $< 6/60$ (97.2%) which suggests that there was likely a significant time lag between when the cataracts became visually significant and when the surgeries were performed. This may again be due to lack of funds. Most of the beneficiaries were low income earners who could not afford the direct cost of surgery. The average direct cost of cataract surgery and admission/ hospitalization in U.B.T.H is about fifty thousand naira (N50,000.00 K) which is almost thrice the approved federal minimum wage of the country of eighteen thousand naira (N18,000.00 K) only. Many privately-owned businesses pay well below this minimum wage. These patients are not financially independent and would be unable to afford the cost of surgery and hospitalization. This may have been responsible for the late presentation to the hospital and their seizing the opportunity to access health care when it was free of direct cost. Thus, these individuals have only indirect costs of surgery such as travel time and costs, time off work for themselves and their carers to attend surgery.

Furthermore, about 62.2% of the patients operated had never been seen by an ophthalmologist. A previous study showed that free eye screening could increase patronage of health institutions by patients.^[15]

Pseudophakic patients constituted 15.8% of the patients. They had obviously had contact with an eye surgeon in the past. Thus, barriers experienced by these patients could be different from those experienced by patients with bilateral cataracts. Financial barriers are more likely in them than psychological (fear of surgery) or cognitive (not knowing that surgery is available or not knowing where to go). None of the patients had their lenses couched. Couching is a traditional method of cataract treatment whereby a sharp or blunt instrument is used to dislocate a cataractous lens, pushing it back into the posterior chamber of the eye.^[3] Couching appears to be more common in the northern parts of the country.^[5,6] However, it still occurs in this locality.^[16] This continued practice of couching by patients with cataract may be due to cultural attitudes in addition to the lack of eye care workers. Despite the fact that the surgeries were free of charge, only 35.9% of the beneficiaries were females. This disproportion is significant as females make up 60.0% of the world blind.^[17] Similar to previous studies, females may be less likely to benefit from cataract surgery even when the facilities are available as a result of gender inequality in accessing eye care due to cultural practices which place women in a more vulnerable and dependent position.^[18] A few of the patients had other systemic diseases such as hypertension and diabetes mellitus. This is likely due to the predominant adult population as these medical conditions occur with increasing age. It is important to ensure proper management of such conditions and stabilisation of patients prior to surgery as they could affect the surgical outcome and cause complications such as poor wound healing in uncontrolled diabetics. Cataract surgery was performed in the eyes without any potential for vision for cosmetic reasons.

The major complications seen in the patients were striate keratopathy (9.7%), posterior capsular rent (7.6%) and vitritis (7.6%). Expulsive haemorrhage is a rare complication of intraocular surgeries. Uncontrolled hypertension and glaucoma are some of its predisposing factors.^[19] It occurred in a hypertensive patient with an eye with no visual potential. Hypertension is a known risk factor for expulsive haemorrhage. The surgeries were carried out by consultants and residents in training. This is likely to have influenced the number of complications. The complication rates are likely to have been higher in residents than in consultants. Studies reveal that complications of cataract surgery are higher among residents in training than consultants.^[20,21] This may be attributed to level of experience and skill. Just like any other surgical procedure NOT in any other procedure or surgery in medicine, complications could occur following cataract surgery. However, modern cataract surgery of extracapsular cataract extraction (ECCE), small incision cataract surgery (SICS), phacoemulsification, microsurgical skills, use of none or very fine suture materials, affordable high-quality intraocular lens implants and facilities for vitrectomy have greatly reduced these complications and improved outcomes following management, if it occurs.^[22]

The findings from this study indicate that direct cost of surgery and hospitalization may likely be a major barrier to the uptake of cataract surgical services in this environment. The cataract surgical rate is low mainly because majority of the patients cannot afford the eye care services. Government and non-governmental organisations should institute measures to reduce the cost of cataract surgery. This can be through partnerships and increasing funding to eye care programmes and surgical outreaches. This is important especially in under-served areas. Gender equity must be considered and advocacy must be done to promote utilization of eye care facilities by females.

Limitations of the study include the fact that the study focused primarily on those who had surgery. It may not provide complete understanding of the access barriers that individuals face that may have prevented them from attending the outreach program. This information is critical for determining the effectiveness of such programs and for addressing the shortage of cataract services in Nigeria.

Acknowledgement

The outreach program was funded by the Federal Government of Nigeria through the Federal Ministry of Health, of Nigeria. The authors declare no conflict of interest.

Conflict of interest

There are no conflicts of interest.

References

1. Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Pararajasegaram R, Pokharel GP, et al. Global data on visual impairment in the year 2002. *Bull World Health Organ.* 2004;82:844-851
2. Kyari F, Gudlavalleti MV, Sivsubramaniam S, Gilbert CE, Abdull MM, Entekume G, et al. Prevalence of blindness and visual impairment in Nigeria: The national blindness and visual impairment study. *Invest Ophthalmol Vis Sci.* 2009;50:2033-2039.
3. Brian G, Taylor H. Cataract blindness- challenges for the 21st century. *Bull World health organ.* 2001;79:249-256.
4. Isawumi MA, Kolawole OU, Hassan MB. Couching techniques for cataract treatment in Osogbo, South West Nigeria. *Ghana Med J.* 2013;47:64-69.
5. Rabi MM. Cataract blindness and barriers to uptake of cataract surgery in a rural community in northern Nigeria. *Br J Ophthalmol.* 2001;85:776-780.
6. Odugbo OP, Mpyet CD, Chiroma MR, Aboje AO. Cataract blindness, surgical coverage, outcome, and barriers to uptake of cataract services in Plateau State, Nigeria. *Middle East Afr J Ophthalmol.* 2012;19:282-288.
7. Ukponmwan CU, Omoti AE, Uhumwangho OM. Reducing the barriers to the uptake of cataract surgical services in a tertiary hospital. *Orient J Med.* 2010;16-19.
8. Adepoju FG, Patel D, Ayanniyi AA, Adekoya BJ, Omolase CO, Monsudi KF. Cataract surgical services in Kwara State, Nigeria. *BJMMR.* 2014;4:3743-3754.
9. Osahon AI. Cataract surgery output and cost of hospitalization in the University of Benin Teaching Hospital. *West Afr J Med.* 2002;21:174-176.
10. Osahon AI, Edema OT, Ukponmwan CU, Waziri-Erameh J, Dawodu OA, et al. Eyecare outreach to rural underserved populations in Edo and Delta States of Nigeria. *CMS UNIBEN JMBR.* 2004;3:83-90.
11. Gyasi M, Amoaku W, Asamany D. Barriers to cataract surgical uptake in the upper east region of Ghana. *Ghana Med J.* 2007;41:167-170.

12. Oluleye TS. Cataract blindness and barriers to cataract surgical intervention in three rural communities of Oyo State, Nigeria. *Niger J Med.* 2004;13:156-160.
13. Momoh RO, Ukponmwan CU, Osahon AI, Uhumwangho MO, Okeigbemen VW, et al. Ocular morbidities in a targeted high-risk urban population in Benin City, Edo State. *Port Harcourt Medical Journal.* 2014;8:204-213.
14. World Health Organisation. Change the definition of blindness.
15. Osahon AI, Omoti AE, Otoibhi SC. Free eye screening in the University of Benin Teaching Hospital Benin City, Nigeria. *JCM.* 2004;9:110-112.
16. Omoti AE, Uhumwangho OM. Why do people still opt for couching in the treatment of cataract? *Medipharm Med J.* 2005;2:183-187.
17. Abou-Gareeb I, Lewallen S, Basett K, Courtright P. Gender and blindness: A meta-analysis of population-based prevalence surveys. *Ophthalmic Epidemiol.* 2001;8:39-56.
18. Lewallen S, Mousa A, Bassett K, Courtright P. Cataract surgical coverage remains lower in females. *Br J Ophthalmol.* 2009;93:295-298.
19. Obuchowska I, Mariak Z. Risk factors of massive suprachoroidal hemorrhage during extracapsular cataract extraction surgery. *Euro J Ophthalmol.* 2005;15:712-717.
20. Johnston RL, Taylor H, Smith R, Sparrow JM. The cataract national dataset electronic multi-centre audit of 55 567 operations: Variation in posterior capsule rupture rates between surgeons. *Eye.* 2010;24:888-893.
21. Tan JH, Karwatowski WS. Phacoemulsification cataract surgery and unplanned anterior vitrectomy: Is it bad news? *Eye.* 2002;16:117-120.
22. Reddy MK. Complications of cataract surgery. *Ind J Ophthalmol.* 1995;43:201-209.