

Eye camp cataract expedition: A review of early post-operative visual outcome

Emem G Abraham¹ Emmanuel O. Megbelayin²

^{1,2}Department of Ophthalmology, University of Uyo Teaching Hospital, Uyo, Nigeria

Abstract: *Less than four years to the end of Vision 2020: The Right to Sight ; a program targeted at reducing preventable causes of blindness all over the world, have steps so far taken in the developing world positively affected this expected outcome? The objective was to assess the immediate post-op visual outcome in an outreach cataract surgery program. A retrospective study of the immediate post-op visual outcome of patient operated using Manual Small Incision cataract surgery in an eye camp during free eye care program. Of the 585 patients, 293 were men and 292 were women in a ratio of 1:1 . The age range was 16-89 while the mean was 59.13±13.36. The presenting VA was hand movement (HM) or worse in 384 (65.6%) and CF- 6/60 in 201(34.4%). Visual acuity on first day post-op was good outcome in 76(13%), borderline in 276(47.6%) and poor in 234(39.5%) This study has shown that cataract surgery camps still contribute a lot to the reduction of preventable blindness in the developing world.*

Key words: *Blindness, Immediate, post- op, preventable, visual acuity*

I. Introduction

As we get closer to the year 2020 when everyone is expected to have the right to sight, the daunting task of reducing the burden of preventable blindness in our community becomes compelling. It is in the light of this that an eye outreach was carried out through the collaborative efforts of the government health ministry and a telecommunication company. Cataract remains the commonest cause of preventable blindness in the world and accounts for 47.8% of global blindness.¹ According to the Nigerian blindness and visual impairment survey of 2007, cataract accounted for 43.0% of blindness, 45.3% of severe visual impairment in the country. From this survey, it was shown that south-south geopolitical zone where Akwa Ibom state belongs had the least cataract surgical coverage (21.6) as against 46.1 in the South West and 42.4 in the South East². Cataract surgical coverage (CSC) is an indicator of the extent to which the need for cataract surgery is being met at the population level. While CSC for eyes reflects the volume of cataract surgery, CSC for people measures the success of VISION 2020 initiative to eliminate cataract blindness. Cataract surgery is the only method of restoring vision for those with blindness/vision impairment due to cataract and it is the second most cost effective public health intervention following immunization to prevent communicable diseases.³ This is because successful cataract surgery improves the quality of life of the affected persons. Outcome can be measured simply as the visual acuity in the operated eye or in the patient; and also in terms of ability to function, quality of life and economic rehabilitation.^{4,5,6,7}

Surgical audit is therefore an important quality control method. Visual outcome following cataract surgery is important for the patient and the eye care provider because good surgical outcomes will help promote cataract surgery for the people as well as improve the quality of life of the patients. Poor surgical outcomes will affect the demand for cataract surgery by the community and have a negative impact on people's perception of cataract surgery.⁸ In assessing the vision restoration benefits achieved through cataract surgery, the measurement of visual acuity (VA) with the presenting vision represents the actual circumstances under which people function in day-to-day activities.⁹ VA is the most common clinical measure of the quality of cataract surgery. It is how we describe and measure the success of surgery.

II. Aim

The aim of this study was to assess the immediate visual outcome in an outreach cataract surgery program

III. Method

Akwa-Ibom state which is located in south-south geo-political area was created from Cross river state in 1987. It is located in the coastal South-Southern part of the country, lying between latitudes 4°32'N and 5°33'N North, and longitudes 7°25'E and 8°25'E East. The State is bordered on the east by Cross River State, on the west by Rivers State and Abia State, and on the South by the Atlantic Ocean and the southernmost tip of Cross River State. Ibibios, Annangs and Oros are the predominant tribes.¹⁴ Uyo the capital city where the outreach was carried out is centrally located and accessible from all parts of the state.

The study was carried out in January 2016 during a state wide free eye care program sponsored by the state government in collaboration with a telecommunication company. Over 15,000 registered for the program but only 9,000 could be screened. Manual small incision cataract surgery (MSICS) was carried out on most of the patients except for only two patients that was converted to extracapsular cataract extraction (ECCE). Surgery was done by ten different surgeons with different levels of competence. Study included teenagers and adults with complete data who had cataract surgery during the three week program. Those with incomplete data, pterygium surgery, 2 patients converted to conventional ECCE and combined pterygium and surgery-cataract surgery were excluded.

Data including age, sex, presenting visual acuity and first day post operative visual acuity were taken. Pre and post operative visual status of each patient was classified using the World Health Organisation (WHO) category of Visual Impairment and Blindness.¹⁵ Levels of visual acuity after cataract surgery were categorized using the WHO recommended guidelines.¹⁶ Visual acuity was done using Snellen's and illiterate E chart. Data collected was analysed using SPSS version 20.0

IV. Result

A total of 585 patients had complete data of whom 293 were men and 292 were women at a ratio of 1:1. The mean age was 59.13 ± 13.36 . Most of the patients were 50 years and above. Figures 1 and 2 show age and sex distribution. The presenting VA was hand movement (HM) or worse in 384 (65.6%) and CF- 6/60 in 201(34.4%). As depicted in table 1, Visual acuity on first day post-op was good outcome in 76(13%), borderline 276(47.6%) and poor in 234(39.5%)

V. Discussion

The cataract surgery audit is an important step to introspect and on its basis one can take action to improve the cataract services. Visual acuity (VA) is the most common clinical measure of the quality of cataract surgery. It is how we describe and measure the success of cataract surgery. The World Health Organization (WHO) has a set of recommendations¹⁷ for the percentage of operations with good, borderline or poor visual outcome following surgery. Unfortunately, the guidelines do not specify when after surgery this should be measured. More useful than these guidelines is the concept of benchmarking. Benchmarking allows hospitals to compare their current performance against their past performance and set targets for how much they want to improve or change their performance. It is also possible to use benchmarking to compare their performance with that of other similar hospitals. A good outcome is defined (WHO classification) as visual acuity of 6/6 - 6/18 in 80-90% of patients, borderline outcome of < 6/18 - 6/60 in less than 5% of patients and poor outcome of < 6/60 in less than 5% patients.^{18,19}

Uyo, the capital city of Akwa Ibom State is easily accessible from all parts of the state. Approximately equal number of male and female (1:1) patients were operated upon in this program. Similar trend was also seen in the Kaduna study (North East Nigeria). This is so probably because it was a free program and women who are generally economically disadvantaged took advantage of this opportunity. The age range was 16-89 with mean of 59.13 ± 13.36 . The commonest cause of cataract is old age so the mean age is consistent with expected value. Adepoju *et al* in Ilorin found a slightly lower mean age of 58.2 years.²⁰ Similar age range have also been reported in Africa²¹⁻²² and Asia²³

Presenting VA in 384(65.6%) was hand movement (HM) or less while 201 (34.4%) had between 6/60 and counting finger(CF). In a study in Kaduna state (North West of Nigeria), it was also found that the presenting VA was HM in more than 50% of the patients.²⁴ This presenting VA was similar and comparable to those in other African studies²¹⁻²². This finding may be because of poverty so people do not seek medical attention early or out of ignorance they continue to shop for glasses with a false hope that their vision will improve with time. This finding is opposite of what obtains in developed countries where patients seek medical attention earlier and therefore present with better visual acuity. In the 1998 European cataract outcome study only 31.5% had presenting visual acuity less than 0.1(6/60)²⁵ By WHO definition, good outcome is $VA \geq 6/18$, borderline VA 6/24-6/60, and poor outcome is $VA < 6/60$. In our series, good outcome 76(13%), borderline 276(47.6%) and poor outcome 231(39.5%) was obtained first day post operation. This is similar to the findings in Ibadan (13%) good outcome with a study in the hospital series.²⁶ This is slightly lower than the series in Kaduna where (16%) had good outcome at discharge. This poor performance could be due to non assessment of lens power (biometry) pre-op, coexisting pathology which was not detected in the older population which made up a large percentage of studied sample. This was so because of inadequate technology e.g. slit lamp, as they were not available in the outreach post. Other causes of poor outcome may include uncorrected residual post-operative refractive error, surgeons at different levels of competence and presence of intra operative and postoperative complications. Vision is known to improve as the eye recovers from the surgery, but we could not do the 6th week VA follow up as most of the patients did not report for follow up. Ibadan series had up to 78.8% with best corrected good vision at 8 weeks, which was higher than what (75.4%) was reported by Nwosu¹⁰ *et al*

in Enugu.²⁷ It is generally assumed that most of those who shun follow up are those patients whose vision have improved significantly so they ignorantly do not bother about follow up.

VI. Conclusion

This study has shown that cataract surgery camps still contribute a lot to the reduction of preventable blindness in the developing world but steps need be taken to improve the outcome of the surgery and also post op follow up.

Limitations of this study included lack of equipment for better pre-op assessment e.g. biometry and inability to track down patients for follow up.

VII. Tables And Figures

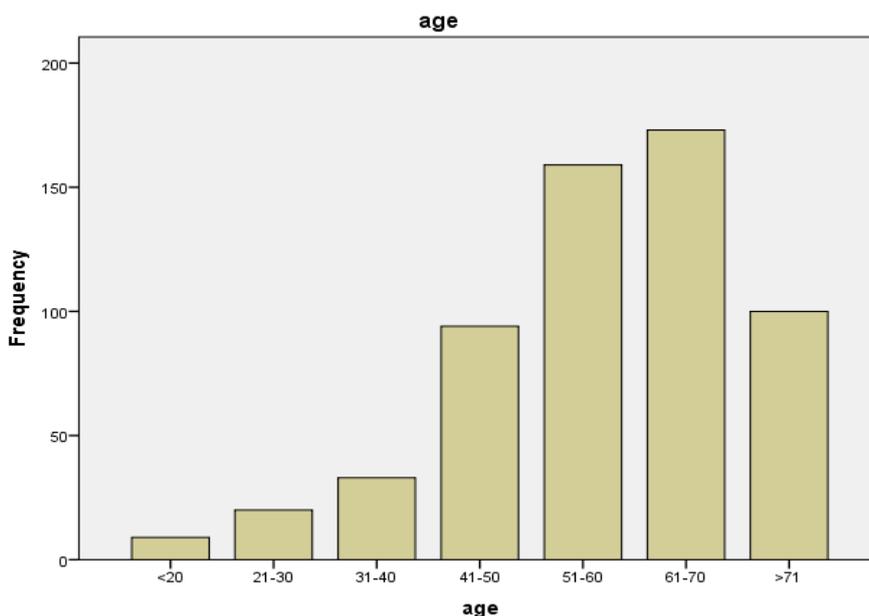


Figure1: Age distribution in studied population

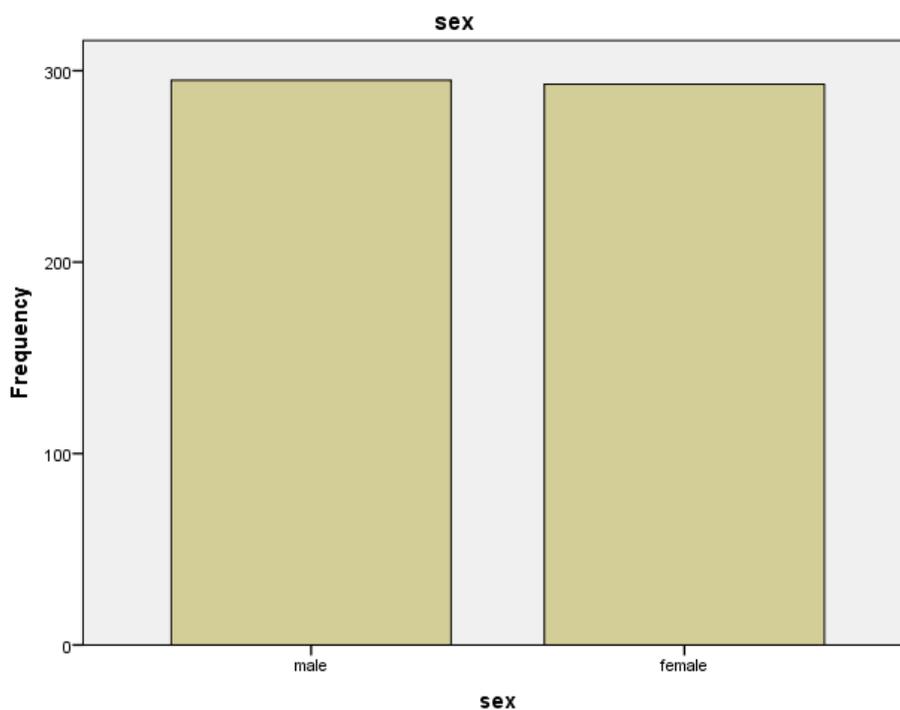


Figure 2: Showing the sex distribution in 585 patients

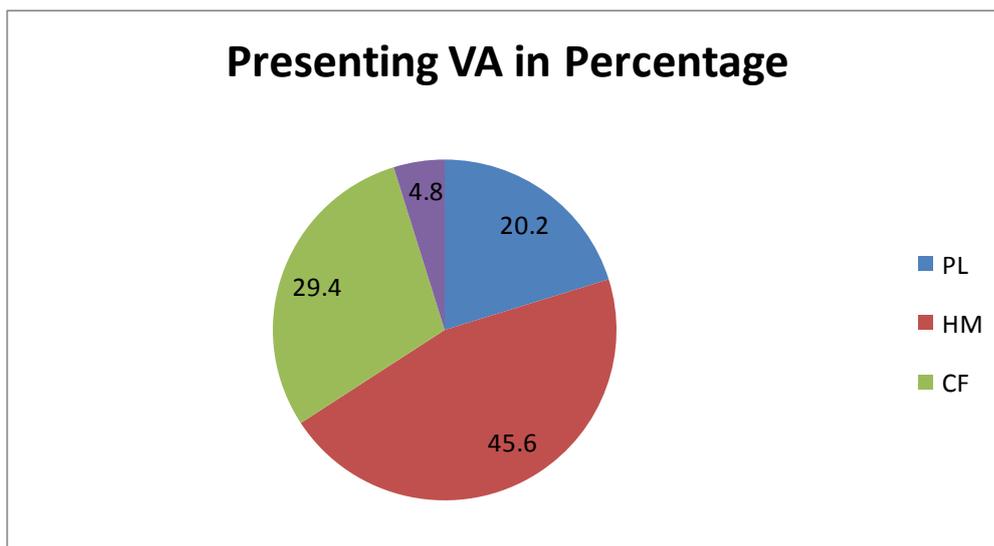


Figure 3: Showing presenting VA of 585 patients in percentages

Table 1: First day post operative VA

Outcome	Visual acuity(VA)	n(%)
Good outcome	$\geq 6/18$	76(13%)
Borderline outcome	6/24-6/60	278(47.5%)
Poor outcome	$< 6/60$	231(39.5%)

References

- [1]. GVS Murthy, Gupta Sanjeev K. current status of cataract blindness and Vision 2020: The right to sight initiative in India. *Indian J Ophthalmol*, 56(6), 2009, 489-494.
- [2]. The Nigeria national blindness and visual impairment survey 2005-2007:23
- [3]. Limburg H,Foster A, Vaidyanathan K, Murthy GV. Monitoring visual outcome of cataract surgery in India. *Bull World Health Organ* 77,1999, 455-460.
- [4]. Hennig A, Shrestha SP, Foster A. Results and evaluation of high volume intracapsular cataract surgery in Nepal. *Acta ophthalmologica*, 70, 1992: 402-406;
- [5]. Desai P et al. Gains from cataract surgery: visual function and quality of life. *British journal of ophthalmology*, 1996, 5.
- [6]. Fletcher A et al. The Madural Intraocular Lens Study III: visual functioning and quality of life outcomes. *American journal of ophthalmology*, 125, 1998: 26-35.
- [7]. Reidy A et al. Outcome of cataract surgery in Central India: a longitudinal follow-up study. *British journal of ophthalmology*, 75, 1991, 102-105.
- [8]. Foster A. Cataract and Vision 2020[the right to sight initiative. *Br J.Ophthalmol*, 85(6) , 2001, 635-637
- [9]. Leon BE. Cataract Surgery outcomes: a priority agenda item. *J Comm Eye Health*, 13(35),2000,33-34
- [10]. Welsh NH: Extracapsular cataract extraction with and without intraocular lens implantation in black patients. *S Afr Med J* 81, 1992,357-360.
- [11]. Rockharell GP,Selvaraj S, Ellwein LB. Visual functioning , quality of life outcomes between cataract operated and un-operated blind population in Nepal. *Br J. Ophthalmol*,82, 1998, 606-610.
- [12]. He M, Xu J, Li S, Wu K, Munoz SR, Elwein LB. Visual acuity and quality of life in patients with cataract in Douman County. *China Ophthalmology* 1999, 106:1609-1615.
- [13]. Dandona L, Dandona R, Nadavilath TJ. Population-based assessment of the outcomes of cataract surgery in an urban population in Southern India. *Am J Ophthalmol*, 127, 1999,650-658
- [14]. Akwa ibom: <http://www.akwaibomstate.gov.ng>
- [15]. WHO(2006) World Health Organisation. ICD-10 updates 2006. World Health Organisation: Geneva. Available from <http://www.who.int/blindness/en/>.
- [16]. Vision 2020. The right to sight 2007. Global initiative for elimination of avoidable blindness: action plan 2006-2011. World Health Organisation, Geneva, 2007
- [17]. World Health Organization. Informal consultation on analysis of blindness prevention outcomes. Geneva: WHO; 1998
- [18]. Global Initiative for the Elimination of Avoidable Blindness. Geneva, July 1996.WHO/PBL/97.61.Rev.1 p.3
- [19]. Hall A, Rosenthal AR. Cataract. In: Yanoff, D, *Textbook of ophthalmology*.(London: Mosby International Publishers; 1999. p. 4,9,1)
- [20]. Adepoju FG, Owoeje JF, Ademola DS. Assessments of one year follow up of patients with ECCE-PCIOL surgery at University of Ilorin Teaching Hospital, Kwara state, Nigeria. *Nig J Ophthal*,12(2), 2004,65-69.
- [21]. Yorston D, Gichuhi S, Wood M, Foster A. Does prospective monitoring improve cataract surgery outcomes in Africa? *Br J Ophthalmol*, 86, 2002,543-547.

- [22]. Karin V, Susan L, et al. Creation and testing of a practical visual function assessment for use in Africa, correlation with visual acuity, contrast sensitivity, and near vision in Malawian adults. *Br J Ophthalmol*,83, 1999,792–795.
- [23]. Nathan GC, Srinivas K, et al. Visual function and postoperative care after cataract surgery in rural China. *Archives of Ophthalmology*,11, 2007, 125–127.
- [24]. Oladigbolu KK, Rafindadi AL, Mahmud-Ajeigbe AF, Chinda D, Pam V, Samaila E. Outcome of cataract surgery in rural areas of Kaduna State, Nigeria. *Ann Afr Med*,13, 2014, 25-29
- [25]. Mats L, Peter B, et al. Report from the European Cataract Outcome Study group. *1998 European Cataract Outcome Study*. 27(8), 2001,1176–1184
- [26]. Olawoye OO, Ashaye AO, Bekibele CO, Ajayi BGK. Visual outcome after cataract surgery at the university college hospital, Ibadan. *Ann Ib Postgrad Me* , 9(1) , 2011,8-13
- [27]. Nwosu SNN, Onyekwe LO. Intraocular lens implant surgery in Onitsha, *Nigeria. Nig J Ophthal*,10(1), 2002,5–9.