



Functional Low Vision Services in a Tertiary Hospital: Our Initial Experience

B. Fiebai^{1*}, E. A. Awoyesuku¹ and C. O. Chikezie¹

¹*Department of Ophthalmology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria.*

Authors' contributions

This work was carried out in collaboration between all authors. Author BF designed the study, performed the statistical analysis, wrote the protocol and first draft of the manuscript. Author EAA and Author COC managed the analyses of the study. Author COC managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Aims: To describe our initial experience regarding the low vision services offered in our center, a tertiary eye hospital, pointing out the major causes of low vision, and types of low vision aids available in our setting.

Study Design: Descriptive, retrospective study.

Place and Duration of Study: Department of Ophthalmology, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State, Nigeria between January 2013 and December 2017.

Methodology: We included 65 patients (42 men, 23 women; age range 4-81 years) with best corrected visual acuity < 6/18 in the better eye who were referred to the low vision clinic. Demographic data, visual acuity, indications for referral and types of low vision aids prescribed were extracted from their hospital records.

Results: The prevalence of functional low vision was 0.6%. The mean age was 47.04 ± 23.4, with a male to female ratio of 1.8:1. Glaucoma was the commonest cause of low vision followed by

oculocutaneous albinism. Posterior segment disorders constituted the majority of cases seen. Telescopes and spectacle magnifiers were the most prescribed low vision aid.

Conclusion: The findings in our study are similar to those reported in other studies however the prevalence is low. There may be poor uptake of these services in our setting possibly due to lack of awareness of the availability of such services. It is hoped that these findings will guide in the planning and implementation of low vision services and the strengthening of the existing ones.

Keywords: Functional low vision; low vision; low vision aids; low vision services; retinal diseases; glaucoma.

1. INTRODUCTION

Low vision (LV) refers to the reduced ability to carry out some basic, important activities as a result of visual impairment that cannot be corrected with medical treatments, ordinary glasses or contact lens.^[1] Such activities include obtaining an education, being employed, living and traveling independently, enjoying and seeing visual images[1].

Functional low vision (FLV) has been used to describe those who fall into the WHO definition of low vision, which is defined as 'A person with low vision is one who has impairment of visual functioning even after treatment and/or standard refractive correction, and has a visual acuity of less than 6/18 to light perception, or a visual field of less than 10 degree from the point of fixation, but who uses, or is potentially able to use, vision for planning and/or execution of a task'[2] .

The above definition distinguishes it from the WHO ICD-10 which includes all individuals regardless of the cause of low vision and makes it difficult to provide care for those with functional low vision.[3] Several studies have reported the common causes of low vision to include: Glaucoma, Age related macular disease, retinitis pigmentosa, retinopathy of prematurity, maculopathies, albinism, optic atrophy, diabetic retinopathy and other retina pathologies [4,5,6,7].

Low vision aids (LVA) are devices used in the rehabilitation of those who still have enough vision to carry out some important daily activities. The overall aim of this is not just beneficiary to the patient whose quality of life is improved, but to the society at large as it will reduce the dependence on their care givers who are able to contribute economically and other wise to the society.

One of the strategies of Vision 2020 to eliminate visual impairment is the provision of comprehensive low vision services and rehabilitation as an integral part of national

programs.[8] Low vision clinics are now being integrated in eye care services as a distinctive unit to give the required attention in terms of assessment and rehabilitation of these patients. In Nigeria however, there are few low vision clinics which are not able to meet the population needs [6].

There are several documented data on the epidemiology of treatable and preventable eye diseases, however there is a dearth of data on relevant information on FLV which will help in not just setting up more low vision clinics but also in assessing the impact of the few existing clinics.

The aim of this article is to add to the much-needed data on the prevalence and causes of functional low vision. This will aid in the planning and evaluation of low vision services.

2. MATERIALS AND METHODS

Case records of patients attending the low vision clinic of the University of Port Harcourt Teaching Hospital from January 2013 to December 2017 were reviewed. Information extracted from the records included patient's demographic data, indications for referral and types of low vision aids used.

All participants were patients who had been seen by ophthalmologists from the general and sub specialist ophthalmology clinic with best corrected visual acuity of < 6/18 in the better eye and subsequently referred to the low vision clinic of the ophthalmology department. Those with no light perception in both eyes and those with treatable causes of low vision were not included in this review. Low vision assessment was carried out by a trained low vision specialist who is an optometrist.

3. RESULTS AND DISCUSSION

There were 65 patients included in this study. The overall mean age was 47.04 ± 23.4. With an age range of 4-81 years. There were 42 males (64.6%) and 23 females (35.4%).

Table 1. Age and sex distribution of the population

Age (years)	Male n (%)	Female n (%)	Total n (%)
<10	2 (3.1)	2(3.1)	4(6.1)
11 – 20	7(10.7)	1(1.5)	8(12.3)
21 – 30	9(13.8)	5(7.6)	14(21.5)
31 -40	1(1.5)	4(6.1)	5(7.6)
41 – 50	4(6.1)	4(6.1)	8(12.3)
51 – 60	5(7.6)	2(3.1)	7(10.7)
61 – 70	5(7.6)	0(0.0)	5(7.6)
>70	9(13.8)	5(7.6)	14(21.5)
Total	42(64.6)	23(35.4)	65(100)
Fisher's exact	9.6	Mean	8.1

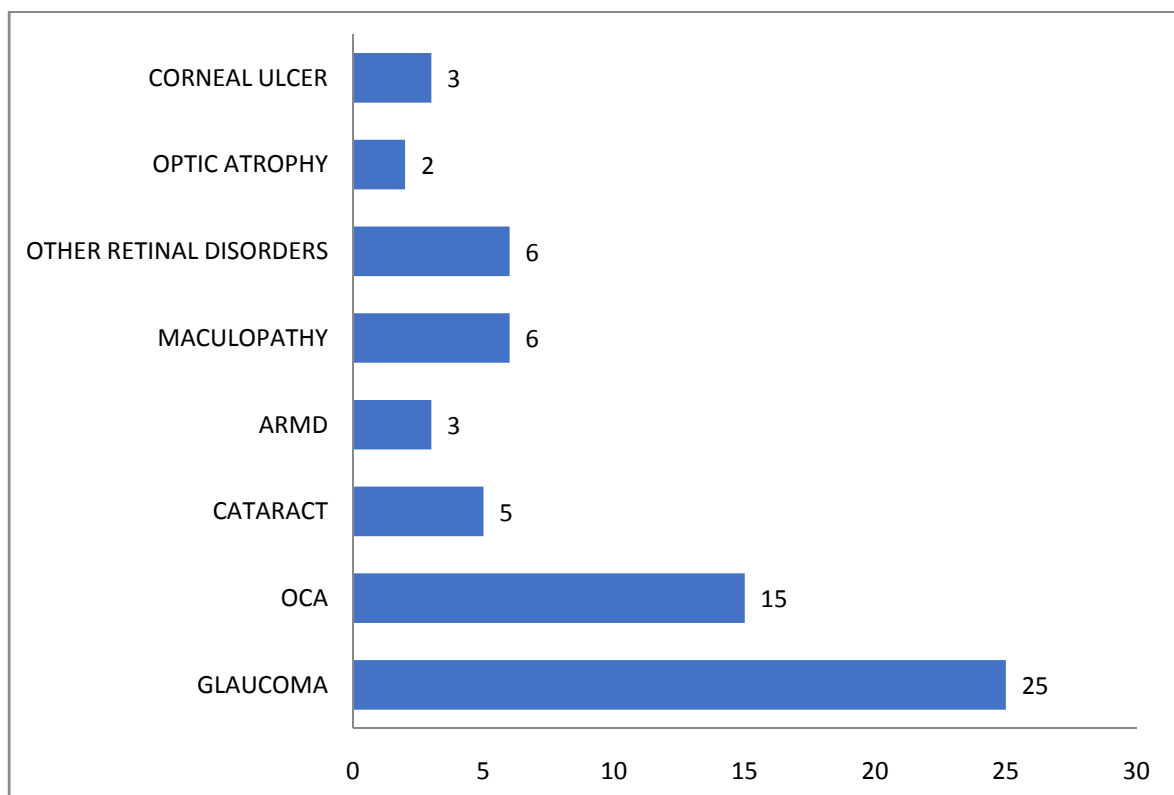


Fig. 1. Distribution of the causes of low vision

Twenty-five patients had glaucoma (including neovascular, paediatric glaucomas and other forms of glaucoma), 15 had oculocutaenous albinism, 6 patients had maculopathies and another 6 had retina disorders which included retinitis pigmentosa, retinal detachment, retinal artery and vein occlusions. Five patients had cataract and complications of cataract, 3 had corneal ulcer and age related macular degeneration and 2 had optic neuropathy.

Fifty-seven percent (57%) of the disorders were posterior segment related while 43% were anterior segment related.

Most of the patients had logMar visual acuities of between 0.5 and 1.0.

The number of patients who were given telescopes was 17. Spectacle magnifiers ere given to 11 patients. Eleven patients did not have any form of low vision aids, bioptics and electronic magnifiers were the least prescribed, 1 patient each.

3.1 Discussion

There are hardly any hospital-based studies reporting the prevalence of functional low

vision. The hospital prevalence of functional low vision in this series is 0.6%. This is slightly lower than that reported in other studies which ranged between 0.9-3.5% [6,9,10,11]. These are however population-based studies and the higher prevalence is not unexpected.

There was a dual peak 21- 30 years and > 70 year of age. (See Table 1). However the majority of patients were above 40 years. Our series mirrors the pattern reported in developed countries where the incidence of LV increases with age and differs slightly from that reported by Olusanya [5,12].

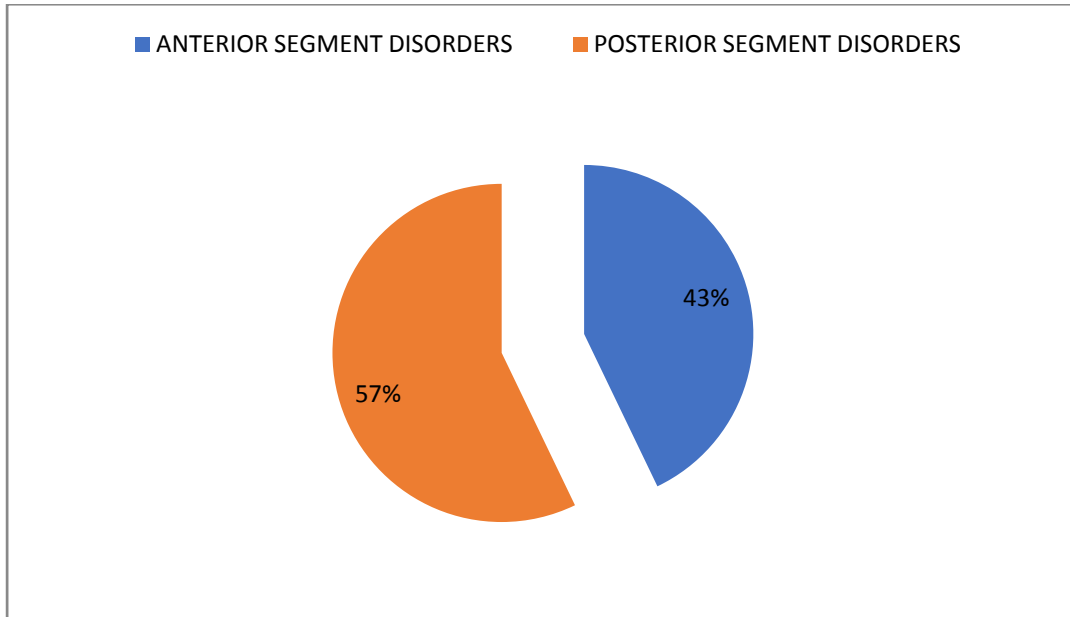


Fig. 2. Distribution of anterior and posterior segment disorders

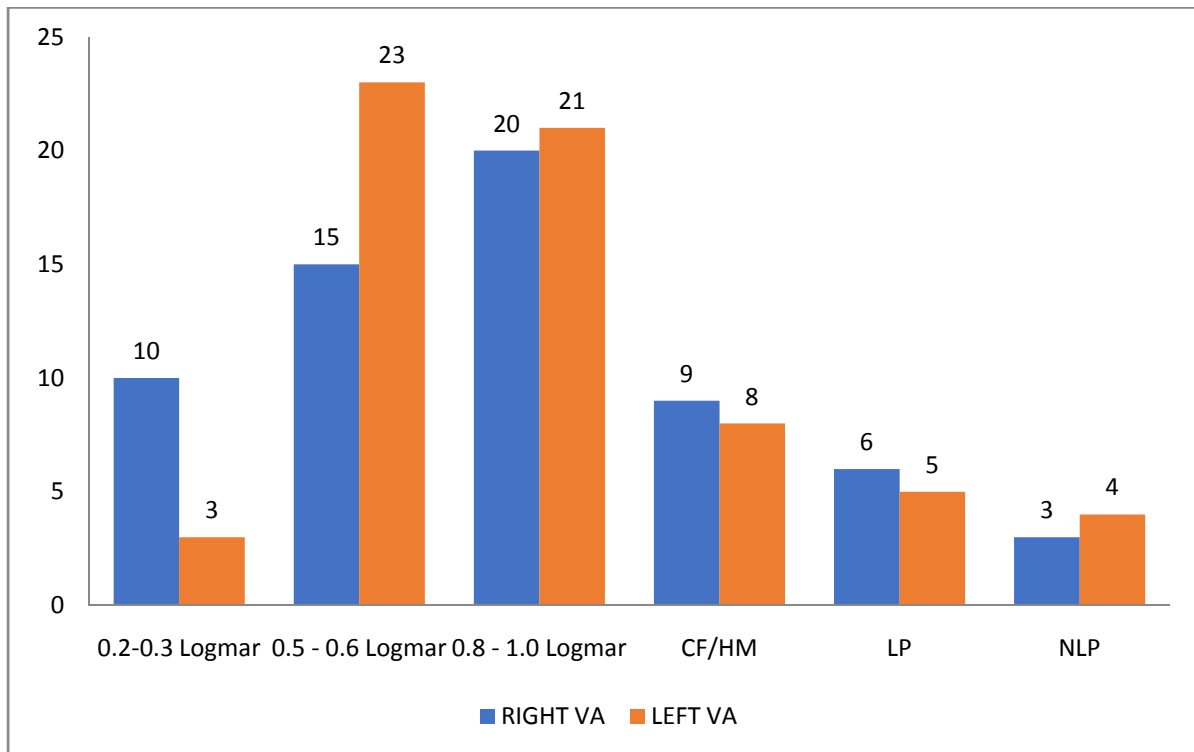


Fig. 3. Visual acuity of the right and left eyes

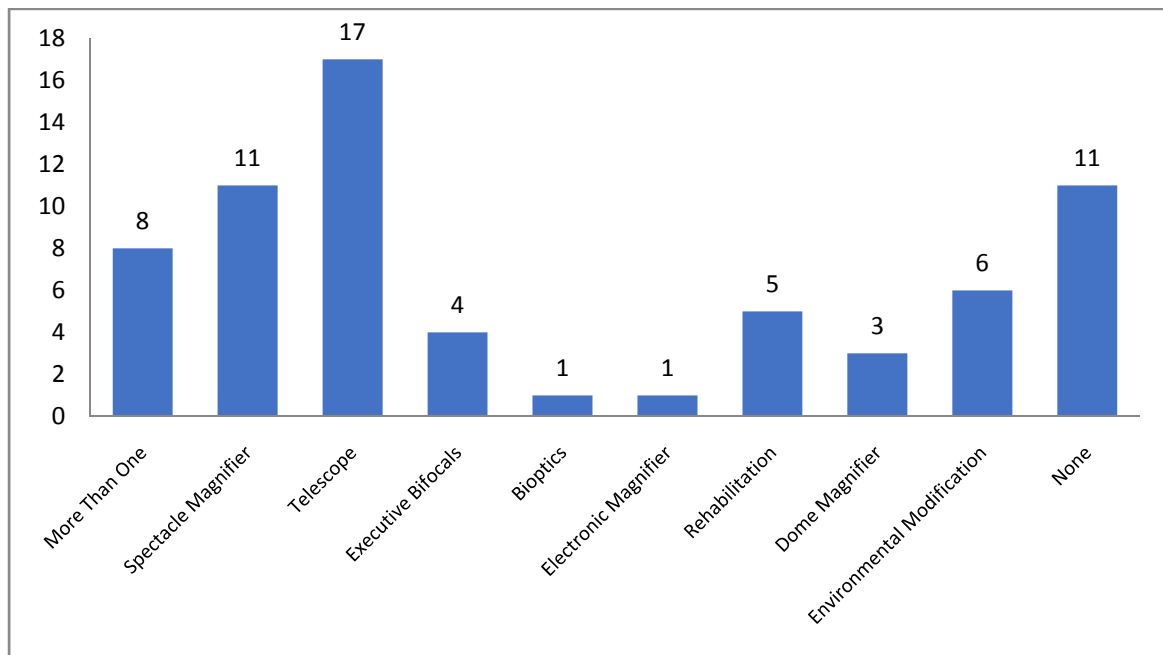


Fig. 4. Distribution of low vision aids

In our series there was a male preponderance, which was similarly reported in other hospital-based studies in the country but at variance with the pattern seen in the Nigerian National survey where there were more females [4,5,6,13]. The difference seen in the National survey could be as a result of the population-based nature of the study where a mixture of socio cultural factors may come into play, particularly where the women tend not venture far away from their places of abode.

Most of the patients had their visual acuities between 0.5 and 1.0 log MAR, this was close to what was reported by Barbie and Wolfsson in their clinic-based analysis [7,12].

Glaucoma (including congenital glaucoma) was the single most common cause of low vision in this study, similar to what was reported in the National blindness survey. Other studies done in the same locality alluded to glaucoma being the commonest cause of low vision [7,14,15]. However, in Olusanya's series Retinitis pigmentosa was the most common indication for low vision services. Cumulatively over half of the study population presented with Posterior segment disorders which was similar to what was reported by Olusanya et al.

Low vision aids are believed to improve the quality of life and mental state of the patients so affected. There are optical and non-optical

interventions. In our series, the most common optical intervention prescribed were telescopes followed by spectacle magnifiers. Similar studies showed telescopes and magnifiers as the most prescribed low vision aids utilised [4,15]. 12% of those who used LVA required a combination of more than one device for their desired tasks and this was also reported in other studies[12]. Eleven of the participants did not get any form of LVA for various reasons which largely include cost and being lost to follow up.

4. CONCLUSION

The findings in our study are similar in most aspects to that seen in both the developed and developing world. There low prevalence of functional low vision in our locality may be suggestive of the lack of awareness of the availability of such services. Awareness needs to be created so that those with low vision can assess care and improve their quality of life. Even though most of those who presented, procured the low vision aids, more needs to be done to make the aids affordable and assessible. It is hoped that these findings will guide in the planning and implementation of low vision services, however a multicentre study is likely to give more valid information.

CONSENT

It is not applicable.

ETHICAL APPROVAL

Ethical approval was obtained from the ethical committee of the University of Port Harcourt Teaching Hospital.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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