Aim: A number of ophthalmic procedures are essential in the management of ocular disorders and are an integral part of ophthalmic practice all over the world. As different therapeutic methods evolve, some ophthalmic procedures have become outdated and some have been modified or replaced by various forms of laser therapy, leading to an increase in uptake of ophthalmic procedures in this country. Also though our patients still prefer non-surgical therapy, when surgery is performed, the results are much improved leading to greater patient satisfaction. This is a result of the use of more sophisticated and expensive surgical equipment and better surgical techniques. The ophthalmic procedures analyzed here were carried out in a general ophthalmic clinic without any subspecialty affiliation.

Methodology: This is a retrospective review of ophthalmic procedures carried out in a specialist facility over a five year period. Information on age, sex and type of ocular procedure was retrieved from case notes of patients and entered into excel sheets. Data was exported from excel sheets for statistical analysis.
Results: A total of 111 patients had ophthalmic procedures over the 5-year period under review with a mean age of 56.7±18.5 years and age range from 7 to 89 years. Sixty-three of the patients (56.8%) were males while forty-eight (43.2%) were females (M:F = 4:3). The commonest ophthalmic procedure carried out was cataract extraction which accounted for 48.6% of cases followed by YAG laser capsulotomy (19.8%) and pterygium excision (18%). No surgical or laser procedures for glaucoma were performed during this period.

Conclusion: Ophthalmic procedures are a very important mode of treatment of eye disorders. The most common procedure performed in our study was cataract extraction and more males than females underwent both cataract surgery and pterygium excision while more females had laser capsulotomy.

Keywords: Ophthalmic procedures; Port Harcourt; Nigeria.

1. INTRODUCTION

Ophthalmic procedures are an important mode of management of ocular disorders. They vary widely depending on the capacity of the personnel and facilities available [1]. The skills for highly specialized procedures are usually acquired by surgeons during sub-specialty training or while working in highly specialized units.

A few ocular disorders are gender specific or geographically influenced so the pattern of procedures performed in a facility may also be influenced by this [2]. An example is entropion surgery in endemic areas which is commoner in women due to spread of the disease by sharing of the traditional eyeliner by women and girls who live in clusters in Islamized regions.

Ophthalmic surgeries attract a higher treatment cost which is economically disadvantageous [3]. Many patients especially the rural poor only accept surgery after they have tried other options including the use of traditional eye medications and couching. In this peripheral clinic, the types of cataract surgery performed in the period under review were Extracapsular cataract extraction and Small incision cataract surgery with intraocular lens implantation after biometry. All the surgical procedures were performed using a Scanoptics SO 5000TFZ operating microscope.

An estimated 285 million people are visually impaired globally and 39 million are blind. Of these, 60% are attributable to surgical causes [4] mostly operable cataracts; either lack of access to surgery which could be due to poverty, not having anyone to take the patient to a distant location or poor surgical procedure outcomes.

It is therefore important to have an audit of services delivered and proffer solutions that can lead to an improvement in access to services to reduce the huge numbers of blind and visually impaired people. Unfortunately, due to lower treatment cost, most patients in this part of the world still prefer to attend the government-owned hospitals in spite of long queues and much longer waiting hours and those who cannot afford even that often fall into the hands of couchers or wait hopefully for the next free medical outreach.

The aim of this study is to assess the pattern of ophthalmic procedures performed over a 5 year period in a new peripheral ophthalmic clinic in the setting of a depressed economy.

2. METHODOLOGY

2.1 Study Design

This is a retrospective review of ophthalmic procedures performed in a specialist facility over a five year period and statistical analysis employed United States Centers for Disease Control and Prevention Epi-Info 7.1.4.

3. RESULTS

One hundred and eleven patients had ophthalmic procedures performed within the five year period under review with a mean age of 56.7±18.5 years (age range 7-89 years). Male patients constituted 56.8% while females were 43.2%. Cataract extraction (48.6%) was the commonest ophthalmic procedure followed by laser capsulotomy (19.8%) and pterygium excision (18%).

4. DISCUSSION

According to global estimates, the number of people of all ages visually impaired is believed to be 285 million of whom 39 million are blind. The major causes of visual impairment are...
uncorrected refractive errors (43%) while cataract is still the main cause of blindness (51%) [5].

Ophthalmic procedures are an important mode of management of ocular disorders [1] and though a large variety of procedures exist in the various subspecialties namely - Oculoplastic, Glaucoma, Surgical retina, Pediatric ophthalmology and strabismus ,Anterior segment, Cornea , a variety of laser procedures, cosmetic and destructive procedures ,ophthalmic procedures are among the safest techniques in medicine with enviable results in properly trained hands using ultra-modern equipment. Presently, a more recent innovation like the Small Incision Cataract Surgery(SICS), an adaptation of Exracapsular cataract surgery, has become extremely popular for surgeons in resource-poor settings in developing countries due to superior results over Intracapsular cataract extraction.

4.1 Pattern of Ophthalmic Procedures

Several studies on ocular surgical uptake exist across our region with most of them citing cataract extraction as the most common surgical procedure performed [1,3,6,7]. Hassan [1] observed a mean age of 59.6 years with more males (50.9%) than females. In his review, cataract extraction accounted for 76.7% of surgeries done followed by pterygium excision (9.0%) and Trabeculectomy (3.9%).

### Table 1. Demographics

<table>
<thead>
<tr>
<th>Total number</th>
<th>Mean age</th>
<th>Age range</th>
<th>Females</th>
<th>Males</th>
<th>M:F</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>56.7±18.5 years</td>
<td>7-89 years</td>
<td>43.2%</td>
<td>56.8%</td>
<td>4: 3</td>
</tr>
</tbody>
</table>

### Table 2. Eye affected

<table>
<thead>
<tr>
<th>Eye affected</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left eye</td>
<td>60</td>
<td>54.1</td>
</tr>
<tr>
<td>Right eye</td>
<td>46</td>
<td>41.4</td>
</tr>
<tr>
<td>Bilateral</td>
<td>5</td>
<td>4.5</td>
</tr>
</tbody>
</table>

![Fig. 1. Distribution of the types of ophthalmic procedure performed](image)
Fig. 2. Sex distribution of the three most common ophthalmic procedures performed

Eze [3] in his study of surgeries performed in the University of Nigeria Teaching Hospital (UNTH), Enugu had cataract extraction accounting for most of the surgeries at 45.1%, Pterygium excision made up 18.4%, and Trabeculectomy 7.5%. Adio [6] analyzing a 10 year surgical uptake in the University of Port Harcourt Teaching Hospital (UPTH) reported that 46.8% of ocular surgeries were cataract extractions, 12.8% were pterygium excision and 3.3% were Trabeculectomy. Onyekonwu [7] had a study population with 58.7% males with cataract surgery accounting for 47.1% of surgeries done, followed by pterygium excision in 18.6%, Trabeculectomy accounted for only 2.2% of surgeries. Trabeculectomy was conspicuously absent in our series because almost all the patients chose the medical therapy option in spite of being informed of a much higher cost implication in the long term. Fortunately, due to availability of the new generation anti-glaucoma drops their eye pressures are well controlled. The few patients that opted for surgical intervention presented with such an advanced stage of the disease that it was considered too risky. This is a major challenge of Primary open angle glaucoma management in our setting because most of our patients reject surgery at the onset, but some of them are not committed to judicious use of their medication.

Our study had cataract (48.6%) accounting for most of the ophthalmic procedures, followed by YAG laser capsulotomy (19.8%) for posterior capsular opacification and Pterygium excision (18.0%).
Cataract extraction was the commonest reason for ocular surgery in most studies and it should be readily accessible as it has been found to be an extremely cost effective intervention capable of increasing the quality of life and productivity of the individual in 75-90% [8,9,10] of cases.

The least common procedures in this series were sphincterotomy and pupilloplasty, sclerokeratectomy, removal of circumferential band, focal retinal photoocoagulation (modified grid laser), granuloma excision, excision of infraorbital papilloma, excision of cyst of moll and excision of conjunctival cyst.

4.2 Mean Age at Ophthalmic Procedure

The mean age was 56.7±18.5 years but most of the patients were in the sixth decade. This can be explained by the fact that most of the ophthalmic procedures performed were for senile cataracts which tends to occur in the older age groups.

The mean age for pterygium excision was however lower- 45.3 years and this may be attributed to increased air pollution in our environment with increased exposure to conjunctival irritants in outdoor workers like farmers and traders still in the working age group.

Hassan [1] had a mean age for ocular surgeries of 59.6 years, which is similar to our study with a mean age of 56.7±18.5 years. In Kano, Kurawa [11] reported a mean age of 62.76±10.49 years which was similar to other studies in Ago Iwoye (western Nigeria) [12] and Orlu (South Eastern Nigeria) [13].

This is different from what has been observed in highly industrialized countries where most cataract surgeries are performed on patients in their 70’s [14].

Bekibe [15] has also postulated that the high exposure to ultra violet radiation from the hot sunny climate of our region may account for cataracts occurring at a much earlier age than in temperate climates.

4.3 Gender and Ophthalmic Procedure

In our study, 43.2% of the patients were females while 56.8% were males. Also of the 3 main ophthalmic procedures performed, there was a male preponderance of cataract and pterygium surgeries while more women had YAG-capsulotomies.

Hassan [1], Eze [3] and Bekibe [12] also report more males than females taking up ocular surgery. Women have been found to bear two-thirds of the global burden of blindness and this may be due to gender-defined social roles, socio-economic factors, literacy, and religion. Most middle-aged to elderly women in developing countries do not have a personal income and so cannot easily take up ocular surgical services in contrast to their male counterparts [16,17]. In contrast the study at Kano [11] reports a female preponderance in uptake of ocular (cataract) surgeries. This was partly attributed to free eye camps where most of the female patients could have surgery without out of pocket expenses.

5. CONCLUSION AND RECOMMENDATION

Ophthalmic procedures are a very important mode of management of ocular disorders because they are definitive therapies targeted to give a permanent solution. The most common procedure performed in our series was cataract extraction; more males than females had ocular surgery while more females had laser therapy. We are aware that the number of procedures done falls far below expectation, but this study brings to the fore the plight of a large population in a resource-poor setting. There is gross under – utilization of services that are normally covered by health insurance which every citizen should be entitled to. Health care should be available even at the grassroots but a depressed economy makes it virtually impossible for people to have sufficient earnings to meet their needs so eye-care is neglected. Policy makers are advised to borrow a leaf from a neighboring country like Ghana which has a functional health insurance system that covers the entire population.

CONSENT AND ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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