

# Knowledge of Ocular Surgery and Associated Factors among Adults in Evbomore Community, Edo State

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## ABSTRACT

**Background:** The efficacy of ocular surgeries as a treatment option for eye pathologies depends on the knowledge and its utilization by the populace. This, however, is influenced by a myriad of factors.

**Aim:** To ascertain the knowledge of ocular surgery and its associated factors among adults in Evbomore Community, Edo State.

**Materials and Method:** A descriptive cross-sectional study was conducted in Evbuomore Community, Benin City among 308 adults selected using a multi-stage sampling method. Data on demography, knowledge of ocular surgeries was obtained using an interviewer-administered questionnaire and analyzed with IBM version 25. Chi-Square test was used to explore association while logistic regression was used to identify predictors. Statistical significance was set at  $p < 0.05$

**Results:** The mean age of respondents was 35.9 (12.7) years. Majority 260 (84.4%) were aware of ocular surgeries, however, only 50 (16.2%) of participants had good knowledge of ocular surgeries. Education ( $p < 0.01$ ) and socio-economic status ( $p = 0.006$ ) positively influenced knowledge of ocular surgeries.

**Conclusion:** Majority of the participants had poor knowledge of ocular surgery. Health education programs are required to improve knowledge of ocular surgeries.

**Keywords:** Ocular surgery, Knowledge, Adults

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## INTRODUCTION

Incorporating shared decision-making into clinical guidelines necessitates increasing patients' knowledge enabling improved outcomes.<sup>1</sup> Ocular surgeries are safe and efficacious, however, this depends largely on the knowledge and willingness of individuals to utilize them.<sup>2</sup>

Globally, at least 2.2 billion people have visual impairment

from preventable causes.<sup>3</sup> In developing countries, most patients who present with advanced eye disease have poor knowledge of treatment options.<sup>4</sup> In Enugu, Nigeria, a survey among patients with glaucoma revealed that most of them were unaware of its surgical treatment.<sup>5</sup> Similarly, in India, there was poor awareness of eye donation among the patients.<sup>6</sup>

This study assessed the knowledge of ocular surgery and its associated factors among adults in the Evbomore Community.

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## MATERIALS AND METHOD

This descriptive cross-sectional study was conducted in Evbomore Community, in Ovia-North East Local Government Area (LGA), Edo State. Ovia-North East LGA is bounded to the North by Ondo State, to the East by Uhumwode, Egor, Oredo, and Ikpoba Okha Local Government Areas, to the South by the Benin River, and to the West by Ovia South-West Local Government Area. It is an urban community with an area of 2,301 km<sup>2</sup> and an estimated population of 587,661 using a population projection of 2.8% per annum. The majority of the residents are traders and Christians<sup>7</sup>

The study population is comprised of people aged 18 years and above, who reside in the community. This was a descriptive cross-sectional study with a total of 308 respondents. The minimum sample size was calculated with the Cochran formula for a single proportion using 14.3% as the prevalence of respondents who had cataract surgery in a previous study.<sup>8,9</sup> A multi-stage sampling technique was used for this study. This was a descriptive cross-sectional study carried out among adults in Evbomore Community.

The minimum sample size was calculated with the Cochran formula for single proportion using prevalence of 14.3% from a previous study.<sup>10</sup> Addition of 10% non-response rate increased the minimum sample size to 308. A multi-stage sampling technique was used for this study. Ovia Northeast Local Government Area (LGA) was selected from the 18 Local Government Areas in Edo State using simple random sampling method by balloting. There are 13 political wards in Ovia Northeast LGA, Oluku ward was selected using simple random sampling technique by balloting. Oluku ward has 11 communities, simple random technique by balloting was used to select Evbomore community. Evbomore community was divided into two clusters A and B using the Ohenhen road. Cluster B was selected using a simple random sampling technique by balloting. The respondents were recruited into the study until the sample size was reached.

Data was conducted between January-October 2023. A pretested structured interviewer-administered questionnaire was used for data collection. The questionnaire was adapted from previous studies.<sup>10-12</sup> The awareness of ocular surgery was assessed with four questions while eight questions assessed the knowledge of ocular surgeries with questions. Ocular surgery otherwise known as eye surgery, was defined as surgery performed on the eye or its adnexa. The knowledge of ocular surgery was assessed using questions on familiarity with the types of ocular surgeries, risks, benefits, and perceived complications.

The types and number of ocular surgeries: Four types of ocular surgeries were assessed. They include surgery for Pterygium, Cataract surgery, Glaucoma and Retinoblastoma. Answers indicative of good knowledge were given a score of one (1) point, while a score of zero (0) was given for responses

that did not signify good knowledge. The total score for the knowledge of ocular surgery was converted to percentages such that scores between 0 – 49.9% were regarded as poor knowledge, while scores  $\geq$  50% were considered good knowledge.

Occupation of respondents was grouped using the modified International Labour Organization (ILO) Classification into skill levels 0-4.<sup>13</sup>

The filled questionnaires were screened for completeness and accuracy of information. Data coding and cleaning were done. Data were entered and analysed with IBM SPSS version 25.0 software. The test of association was done using a Chi-squared test. A p-value < 0.05 was considered statistically significant. Logistic regression was done to determine independent predictors of willingness to accept ocular surgery and their measures of effect and confidence interval recorded [OR (95% CI)]. Results were presented using prose, frequency tables and figures.

Ethical approval was obtained from the Health Research Ethics Committee of the University of Benin Teaching Hospital. Informed consent was obtained from the respondents. Confidentiality was ensured.

## RESULTS

### Socio-demographic characteristics

One hundred and twenty-four (40.3%) respondents were in the 18-30 years age group. The mean age was 35  $\pm$  12.7 years. Over half of the respondents 172(55.8%) were females while 136(44.2%) were males. Majority of respondents 296(96.1%) were Christians and over half 180(58.4%) of them were married. Two thirds of the respondents 186(60.4%) had skill level 2. Over half of the respondents 173(56.2%) had a secondary level of education and 130(42.2%), earned between 30,000 and 60,000 Naira monthly. (Table 1)

### Awareness and source of information of eye surgery

Two hundred and sixty (84.4%) respondents were aware of eye surgery. Sources of information on eye surgery were friends 128(41.6%), hospital 114(37.0%) and Newspapers 6(1.9%)(Table 2).

### Knowledge of number and types of ocular surgery

Over half of the respondents 159(51.6%) did not know how many types of ocular surgeries there are, 99(32.1%) respondents knew 1 type of ocular surgery and 1(0.3%) respondent knew of five types of ocular surgery. Types of ocular surgery identified were Cataract surgery 136(65.1%), Glaucoma surgery 56(26.8%) and surgery for retinoblastoma 7(3.3%)(Table 3)

**Table 1: Socio demographic Characteristics of Respondents**

Variable	Frequency (n=308)	Percent
<b>Age(years)</b>		
18 - 30	124	40.3
31 - 40	87	28.2
41 - 50	54	17.5
51 - 60	35	11.4
> 60	8	2.6
<b>Mean Age (SD) = 35.9(12.7)</b>		
<b>Sex</b>		
Male	136	44.2
Female	172	55.8
<b>Religion</b>		
Christianity	296	96.1
Islam	9	2.9
African Traditional Religion	3	1.0
<b>Marital Status</b>		
Married	180	58.4
Single	112	36.4
Widowed	10	3.2
*Others	6	2.0
<b>Occupation</b>		
Skill level 0	38	12.3
Skill level 1	42	13.6
Skill level 2	186	60.4
Skill level 3	11	3.6
Skill level 4	31	10.1
<b>Educational Status</b>		
No formal Education	7	2.3
Primary	23	7.5
Secondary	173	56.2
Tertiary	105	34.1
<b>Monthly Income (Naira)</b>		
< 30,000	93	30.2
30,000 - 60,000	130	42.2
60,000 - 90,000	59	19.2
> 90,000	26	8.4
<b>Socio-economic Status (SES)</b>		
Low SES	48	15.6
Middle SES	238	77.3
High SES	22	7.1

\*cohabiting 2 (0.6%), seperated 4 (1.3%)

**Knowledge of eye surgery, benefits, complications, and fears**

Reported benefits of eye surgery include improved vision 255(66.2%), reduced pain 62(16.1%), prolonged life 31(8.1%). Complications from eye surgery cited by respondents include loss of vision 118(38.4%), pain 76(24.8%) and light flashes 21(6.8%). Almost half of the respondents 146(47.4%) had some fear about eye surgeries (Table 4)

Majority of the respondents (83.4%) had good knowledge of ocular surgery (Fig 1)

**Table 2: Awareness and Source of information on Ocular Surgery among respondents**

Variables	Frequency	Percent
<b>Awareness of Eye Surgery(n= 308)</b>		
Yes	260	84.4
No	48	15.6
<b>Source of information (n=475)*</b>		
Friends	128	41.6
Hospital	114	37.0
Family	88	28.6
Church	53	17.2
Television	25	8.1
Healthcare professionals	24	7.7
Internet	19	6.2
Radio	18	5.8
Newspaper	6	1.9

\*Multiple response

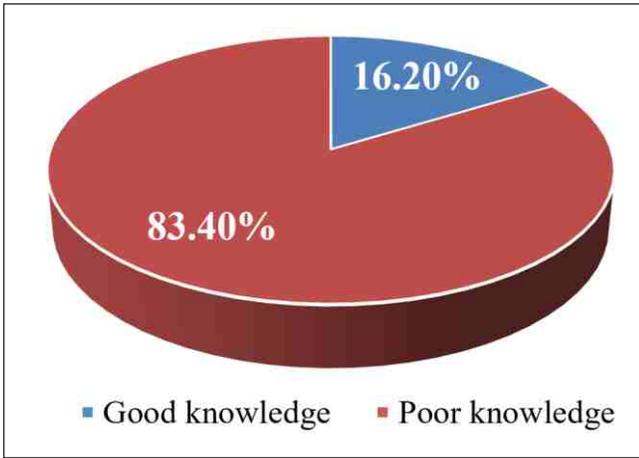
**Table 3: Knowledge of number and types of ocular surgery among respondents**

Variable	Frequency	Percent
<b>Number of types of ocular surgery known(n=308)</b>		
0	159	51.6
1	99	32.1
2	37	12.0
3	5	1.6
4	7	2.3
5	1	0.3
<b>Types of ocular surgery known(n=209)*</b>		
Cataract	136	65.1
Glaucoma	56	26.8
Pterygium	10	4.8
Retinoblastoma	7	3.3

\*Multiple response

**Table 4: Knowledge of eye surgery, benefits, complications and fears among respondents**

Variable	Frequency	Percent
<b>Eye surgery improve vision (n=308)</b>		
Yes	217	70.5
No	91	29.5
<b>Benefits of eye surgery (n=385)*</b>		
Improved vision	255	66.2
Reduce pain	62	16.1
Cosmetic reason	37	9.6
Prolong life	31	8.1
<b>Complications of eye surgery (n=307)*</b>		
Vision loss	118	38.4
Pain	76	24.8
Increased redness	65	21.2
Eyelids swelling	27	8.8
Light flashes	21	6.8
<b>Degree of fear for eye surgeries (n=308)</b>		
I have some fear	146	47.4
I have little fear	113	36.7
I have no fear	49	15.9



**Figure 1: Composite Knowledge of Ocular Surgery among Adults in Evbomore Community**

**Factors associated with knowledge of ocular surgery**

Educational status significantly affected knowledge ( $p < 0.01$ ) as more respondents with tertiary education had better knowledge of ocular surgery compared to those with no

formal education. (Table 5) On multivariate logistic regression, socio-economic status (OR = 1.260, 95%CI 1.067– 1.488;  $p = 0.006$ ) was a significant determinant of knowledge of ocular surgery.

**DISCUSSION**

Most of the respondents were aware of ocular surgeries, however, only a few respondents had good knowledge of the benefits, risks and complications associated with the surgeries. Level of education significantly influenced knowledge.

The mean age (SD) of the respondents was 35.9 (12.7) years. This is similar to the findings of a cross-sectional study done in Nepal, India where the mean age (SD) of respondents was 38.38 (15) years.<sup>14</sup>

Most respondents were aware of eye surgery as a treatment option. This finding could be attributed to the location of the community in the same Local Government Area with the University of Benin Teaching Hospital (UBTH). The Department of Ophthalmology, UBTH organizes outreach

**Table 5: Sociodemographic factors and knowledge of ocular surgery among respondents**

Variable	Knowledge of Ocular Surgery		$\chi^2$	p-value
	Good Freq (%)	Poor Freq( %)		
<b>Age (years)</b>				
18- 30	20(16.1)	103(83.1)	5.062	0.751
31 - 40	12(13.8)	75(86.2)		
41 - 50	7(13.0)	47(87.0)		
51 - 60	9(25.7)	26(74.3)		
>60	2(25.0)	6(75.0)		
<b>Sex</b>				
Male	24(17.6)	112(82.4)	6.691	0.153
Female	26(15.1)	146(84.9)		
<b>Skill Level of Respondents</b>				
Skill level 0	10(26.3)	28(73.7)	9.660	0.290
Skill level 1	4(9.5)	38(90.5)		
Skill level 2	25(13.4)	160(86.0)		
Skill level 3	2(18.2)	9(81.8)		
Skill level 4	9(29.0)	22(71.0)		
<b>Educational Status</b>				
No formal Education	0	7(100.0)	39.062	<0.01
Primary	2(8.7)	21(91.3)		
Secondary	12(6.9)	160(92.5)		
Tertiary	36(34.3)	69(65.7)		
<b>Monthly Income</b>				
< 30,000	9(9.7)	83(89.2)	9.880	0.130
30,000 - 60,000	8(30.8)	18(69.2)		
60000 - 90,000	21(16.2)	109(83.8)		
> 90,000	12(20.3)	47(79.7)		

activities to improve the eye health of the catchment area.<sup>15</sup> This finding is in contrast with the results from a cross-sectional study done in Nepal, India in 2018, which revealed that overall awareness of the common ocular conditions, preventive measures and treatment options was low in urban populations.<sup>14</sup> Furthermore, another cross-sectional study conducted in Osun State, Nigeria, in 2014, also revealed a low level of awareness of treatment options for glaucoma.<sup>16</sup> There is a need for continued sensitization and health education of the members of the community on ocular health, well-being and treatment options through collaboration with local health providers, non-governmental organizations, celebration of recognized days for ocular conditions within the community and local media using multilingual resources. This will sensitize the members of the community on the ocular diseases, complications, and implications of the choices they make for treatment.

Only one-sixth of respondents had good knowledge of ocular surgery in this study. This finding could be due to infrequent visits to healthcare facilities for routine eye checks, where the necessary information about these surgeries would have been obtained through health education. Lack of adequate and proper knowledge on ocular surgeries as a treatment option for eye diseases could lead to patronage of other options that may not improve vision or further complicate ocular pathology. This aligned with findings from a descriptive, cross-sectional study conducted among adults in 2021, where a high proportion of the participants had poor knowledge of what cataract surgery entailed.<sup>17</sup> Provision of educational materials such as pamphlets and informative brochures on ocular pathologies and their treatment options, inclusive of benefits and risks, in clinics as well as distribution during campaigns in communities may increase the knowledge of members of the community, giving them appropriate information to act on when necessary.

Respondents with tertiary education had better knowledge of ocular surgery compared to those with no formal education who all had poor knowledge of ocular surgery, and this was statistically significant. The increasing level of education has implications on the depth of comprehension and feedback which impacts health choices. This is in tandem with a study done to assess the level of awareness about cataracts, visual impairment and its treatment options among university students which revealed a good level of awareness among respondents.<sup>18</sup>

Increasing the level of education among respondents in communities and the society at large is crucial for overall health and well-being. Investing in early childhood education, accessible schools and quality teachers, scholarships and financial aid, distance learning programs and community libraries may greatly improve the level of education in the society, with attendant improvement in the level of knowledge for better health outcomes.

There was a statistically significant positive relationship between socio-economic status and knowledge of ocular surgery. This finding may be attributable to higher income earners, having more funds to access good health care, better access to social media and other sources of information, better social amenities and infrastructure and residing closer to the tertiary hospitals to access specialized ophthalmic care, thereby increasing the awareness of ocular surgery. This is similar to the findings of a cross-sectional study done to describe the demographic and clinical profile of patients who underwent refractive surgery screening that indicated higher income earners were approximately three times more likely to be aware of kerato-refractive surgical procedures compared to lower income earners.<sup>19</sup> Enhancing education and skill development as well as providing employment opportunities, tailored to individuals in the community may significantly improve the socio-economic status of the people, improving their access to proper health information and treatment options.

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