

# Knowledge, Attitude and Acceptance of cataract surgery in Ikpoba Okha Local Government Area of Edo State, Nigeria

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## ABSTRACT

**Aim:** To determine the knowledge, attitude and acceptance of cataract surgery in Ikpoba Okha Local Government Area of Edo State, Nigeria.

**Methods:** This study is a descriptive cross-sectional study. Cluster sampling technique was used to obtain the required study population. All the 60 communities each of which is roughly of equal size constituted the sampling frame. The study was conducted on adults 40 years and older in the study area over a two months period. A structured interviewer administered questionnaire based on the specific objectives of the study was used. This was pre-tested in another community with similar socio-demographic characteristics. Visual acuity was measured using the Snellen chart and the eyes examined with the aid of a pen torch and the Welch Allyn direct ophthalmoscope. Data analysis was done using Statistical Package for Social Scientist (SPSS) version 16.

**Results:** Two hundred and eighty subjects with cataract comprising 150 males and 130 females, giving a male to female ratio of 1.15:1 were studied. The mean age of the respondents was 65.55 years (SD  $\pm$  10.70). The overwhelming majority, 253(90.4%) had heard of cataract. Those with good knowledge of cataract were 91 subjects (32.5%) and those with poor knowledge were 189 subjects (67.5%). The overwhelming majority of the subjects had immature cataract in either eye. Older age ( $p < 0.01$ ), female sex ( $p < 0.01$ ), African traditional religion ( $p < 0.05$ ), higher educational status ( $p < 0.01$ ), civil servants and teaching occupation ( $p < 0.01$ ) and higher monthly income ( $p < 0.01$ ) were significantly associated with good knowledge of cataract and cataract treatment. There were 154 subjects (55%) who were willing to have cataract surgery and 128 (45%) who were not. Fear of loss of sight, 58 subjects (20.7%) followed by those who could still see clearly, 32 (11.4%) and fear of death, 20(7.1%) were the most common reasons for unwillingness to have surgery. Of those willing to have surgery, the main reasons why they were yet to have surgery were not knowing where to go, 33(11.8%), not previously aware of the treatment, 32(11.4%), high cost, 29(10.4%), and cataract not mature, 27(9.6%). Higher age ( $p < 0.001$ ), male gender ( $p < 0.05$ ), Christian religion ( $p < 0.001$ ), higher educational status, ( $p < 0.001$ ), teachers and retired civil servants ( $p < 0.001$ ), and monthly income range <N10,000.00 to N30,000.00 ( $p < 0.001$ ) were most willing to have cataract surgery.

**Conclusion:** The overwhelming majority had heard of cataract. Majority of the subjects have poor knowledge of cataract and its treatment. Majority of the subjects had immature cataract and were willing to have cataract surgery. Fear of loss of sight, followed by those who could still see clearly and fear of death, were the most common reasons for unwillingness to have surgery.

**Key words:** Knowledge, cataract, cataract surgery, acceptance, cost.

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## INTRODUCTION

Cataract can be defined as an opacity of the crystalline lens. Cataracts are the major cause of

blindness and visual impairment in developing countries and contributes to more than 90% of the total disability adjusted life years.<sup>1</sup> Worldwide, 16 million people are blind because of cataracts.<sup>2</sup>

The Nigerian National Blindness Survey showed that cataract was the leading cause of blindness accounting for 45% of all causes of blindness.<sup>3</sup> Among individuals aged 40 years or older and 50 years or older in Nigeria, the prevalence of blindness is 4.2% and 5.5% respectively.<sup>4</sup> Cataract accounts for 43% of blindness, and at least 400,000 individuals are affected by an operable cataract (i.e. visual acuity of < 6/60 attributable to cataract) in Nigeria.<sup>5</sup>

Cataract is probably the most treatable cause of blindness. Cataract surgery is the commonly performed procedure and it has evolved through various techniques, including intracapsular cataract extraction, extracapsular cataract extraction, phacoemulsification and small or microincision cataract surgery.<sup>6</sup>

Knowledge about cataract and its treatment has been identified as an important factor in determining access to cataract surgical services.<sup>7</sup> A population based study in rural China showed that better knowledge of cataract and cataract surgery was significantly predictive of having had cataract surgery.<sup>7</sup> In this population-based assessment of potential barriers to surgery in rural China, subjects with less knowledge about cataract and poor perceptions of local service quality were less likely to undergo cataract operations.<sup>7</sup> Participants in another study showed poor understanding of cataract, but ranked educational interventions low as methods of increasing uptake.<sup>8</sup> Information on cataract and the success of cataract surgery can be disseminated through every means of public information but surgical camp attendant or operated patients have been found to be effective media to spread the message that cataract is curable.<sup>9</sup> A report from Guangdong indicates that more than 95% of persons undergoing surgery knew a person who had already had the procedure.<sup>10</sup>

The Nigeria National Blindness and Visual Impairment Survey showed that the prevalence of cataract surgery was 1.6% (95% confidence interval 1.4-1.8), significantly higher among those aged  $\geq 70$  years.<sup>11</sup> Cataract surgical coverage (CSC) in Nigeria was 38.3%. This is among the lowest in the world.<sup>11</sup> Coverage was 1.7 times higher among males than females. Coverage was only 9.1% among women in the South-South geopolitical zone.<sup>11</sup> Part of the problem is due to poor acceptance of surgery. Patients may refuse to accept cataract surgery for various reasons. In Nigeria, several studies have shown that the main reason for refusal to accept surgery was the high cost of surgery.<sup>11-15</sup> Many cataract patients who accept to have cataract surgery may also not be willing to pay for it.<sup>16</sup> Willingness to pay may increase as the population gains familiarity and trust in the service.<sup>16</sup> However, even when the cost of surgery is excluded and cataract surgery provided free of charge, some patients still refuse to accept surgery.<sup>17</sup>

This study therefore aims to determine the level of knowledge of cataract and cataract surgery among subjects with cataract in Ikpoba Okha Local Government Area (LGA) as well as the acceptability of cataract surgery. The influence of knowledge of cataract on these factors will also be determined.

### MATERIALS AND METHODS

This study is a descriptive cross-sectional study of cataract knowledge, attitude and acceptance of cataract surgery among adults in Ikpoba Okha Local Government Area in Edo state, Nigeria. Cluster sampling technique was used to obtain the required study population. All the 60 communities each of which is roughly of equal size constituted the sampling frame. All the communities were numbered from 1-60. From the census figures, each village was estimated to consist of about 6,200 inhabitants. Based on the estimated sample size of 290 individuals, 20 communities were selected at random in such a way that every third community was included in the study. The name of each community was

written on a piece of paper which was folded and dropped into a ballot box. The first community was randomly selected by balloting. House to house survey was carried out and all adults above 40 years were examined until we were able to identify 15 adults with cataract per selected community.

This study was approved by the ethics and research committee of the University of Benin Teaching Hospital. Consent was obtained from the Chairman of the Local Government Area, the Medical officer of Health and the traditional ruler of the communities. Informed consent (written) was obtained from the participants after verbal explanation of the nature and benefits of the study to them. The participants were also made to understand that they can withdraw at any stage of the study, assured of strict confidentiality and non-use of invasive procedures during the exercise.

The survey team was made up of the researchers, two ophthalmology residents, two final year medical students and a community health extension worker (fluent in the local dialect). All members of the survey team were trained by the researchers for a period of two days on their expected roles. The ophthalmology registrars were trained on how to administer questionnaires and proper recording of responses in the questionnaire. The medical students were trained to obtain consent while the community health extension worker was trained on how to translate and back-translate responses.

A structured interviewer administered questionnaire based on the specific objectives of the study was used. This was pre-tested in another community with similar socio-demographic characteristics.

The questionnaire was divided into three sections. Section A comprises the socio-demographic characteristics including age, sex, religion, ethnic group, occupation, marital status, level of education and monthly income. Section B deals with the clinical features, including the presenting complaints and findings on

examination. Section C has questions on the knowledge, attitude and acceptance of cataract surgery in the community.

Visual acuity was measured using the Snellen literate chart for distance placed at six meters either outdoors in daytime or inside the examination room with adequate illumination. For illiterate patients, the illiterate "E" chart was used. Each eye was tested separately with and without glasses where applicable. For patients who could not see the Snellen letters at 3 meters, the ability to count fingers at varying distances, to perceive hand movement or light was used. The pinhole was used for subjects with distant visual acuity less than  $\frac{6}{6}$  and were subsequently refracted, while near visual acuity was tested using Jaegar's reading chart.

Further clinical assessment included the use of Welch Allyn direct ophthalmoscope for fundoscopy. Dilated fundoscopy was achieved with 2.5% phenylephrine hydrochloride and 0.5% tropicamide for individuals with clear cornea but impaired red reflex, small pupils or severely reduced vision  $< \frac{6}{60}$ , excluding those with shallow anterior chambers. Cataract was classified into immature, mature and hypermature.

Subjects were informed about the findings and those that required minor treatment were attended to immediately while more complex problems and cataract cases were referred to the University of Benin Teaching Hospital where necessary action was taken.

Data analysis was done using Statistical Package for Social Scientist (SPSS) version 16. Frequencies and proportions will be used to summarize categorical variables while mean, median and standard deviation will be used for the quantitative variables. Tests for statistical significance were done with Chi square test and student's t test.

## RESULTS

Two hundred and eighty subjects with cataract were studied. There were 150 males and 130

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females, giving a male to female ratio of 1.15:1. The mean age of the respondents was 65.55 years (SD  $\pm$  10.70). The mean age for males was 69.05 years (SD  $\pm$  12.5) while the mean age for females was 66.08 years (SD  $\pm$  8.17). The 95% CI was 63.838-67.262 for males while for females, the 95% CI was 64.676-67.484. There was no statistically significant difference in age between males and females (t cal= 0.4603, df= 278 and p=0.6457).

**TABLE 1: TYPES OF CATARACT SEEN IN SUBJECTS IN IKPOBA OKHA LGA**

Type of cataract	Number of eyes		Percentage	
	RE	LE	RE	LE
Immature	221	227	78.9	81.1
Mature	59	47	21.1	16.8
Hyper mature	0	6	0	2.1
<b>Total</b>	<b>280</b>	<b>280</b>	<b>100</b>	<b>100</b>

There were 154 subjects (55%) who were willing to have cataract surgery and 128 (45%) who were not willing to have cataract surgery. Fear of loss of sight, 58 subjects (20.7%) followed by those who could still see clearly, 32 (11.4%) and fear of death, 20(7.1%) were the most common reasons for unwillingness to have surgery. Of those willing to have surgery, the main reasons why they were yet to have surgery were not knowing where to go, 33(11.8%), not previously aware of the treatment, 32(11.4%), high cost, 29(10.4%), and cataract not mature, 27(9.6%).

**TABLE 2: RESPONSE TO QUESTIONS ON KNOWLEDGE OF CATARACT IN SUBJECTS IN IKPOBA OKHA LGA**

Questions and responses of subjects		Frequency (N)	Percentage (%)
<b>Have you heard of cataracts</b>	Yes	253	90.4
	No	27	9.6
<b>Source of information</b>	Television	48	17.1
	Health education	20	7.1
	Ophthalmologist	39	13.9
	Family member	70	25.0
	Friends	1	0.4
	Neighbour	43	15.4
	Operated patient	30	10.7
	Local drug vendor	1	0.4
	Other medical practitioner	1	0.4
	None	27	9.6
<b>How is cataract treated</b>	Drugs	20	7.1
	Surgery	141	50.4
	Herbs	18	6.4
<b>Is cataract curable?</b>	I don't know	101	36.1
	Yes	193	68.9
	No	21	7.5
<b>Is operation mandatory?</b>	I don't know	66	23.6
	Yes	105	47.5
	No	72	25.7
	I don't know	103	36.8

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**TABLE 3: RESPONSE TO OTHER QUESTIONS ON KNOWLEDGE OF CATARACT IN SUBJECTS IN IKPOBA OKHA LGA**

Questions and responses of subjects		Frequency (N)	Percentage (%)
<b>Do you know the name of the eye condition?</b>	Yes	202	72.1
	No	78	27.9
<b>If yes, what is the name of cataract?</b>	Cataract	202	100
	Not cataract	0	0
<b>When did you know about the disease?</b>	Today	100	35.7
	Less than 1month	18	6.4
	1month-1year	56	20.0
	More than 1year - 5years	77	27.5
	More than 5years	29	10.4
	Yes	222	79.3
<b>Do you know where condition is normally treated?</b>	No	58	20.7
	Yes		
<b>If yes, where?</b>	Hospital	208	
	Traditional healer	14	
<b>Total</b>		222	100

Those with good knowledge of cataract were 91 subjects (32.5%) and those with poor knowledge were 189 subjects (67.5%).

**TABLE 4: FACTORS AFFECTING KNOWLEDGE OF CATARACT IN SUBJECTS IN IKPOBA OKHA LGA**

CHARACTERISTIC		KNOWLEDGE		Chi-square	Degree of freedom	p-value
		GOOD N (%)	POOR N (%)			
<b>Age group (yrs)</b>	=50yrs	7 (31.8)	15 (68.2)	38.056	5	0.000
	51-60 yrs	58 (56.3)	45 (43.7)			
	61-70 yrs	55 (69.6)	24 (30.4)			
	71-80 yrs	46 (88.5)	6 (11.5)			
	81-90 yrs	18 (94.7)	1 (5.3)			
	Above 90 yrs	5 (100)	0			
<b>Sex</b>	Male	119 (79.3)	31 (20.7)	20.622	1	0.000
	Female	70 (53.8)	60 (46.2)			
<b>Religion</b>	Christian	172 (65.9)	89 (34.1)	4.486	1	0.034
	African tradition	17 (89.5)	2 (10.5)			
<b>Educational status</b>	None	95 (60.5)	62 (39.5)	15.936	3	0.001
	Primary	49 (74.2)	17 (25.8)			
	Secondary	18 (62.1)	11 (37.9)			
	Tertiary	29 (96.4)	1 (3.6)			

**TABLE 5: OTHER FACTORS AFFECTING KNOWLEDGE OF CATARACT IN SUBJECTS IN IKPOBA OKHA LGA**

CHARACTERISTIC		KNOWLEDGE		Chi-square	Degree of freedom	p-value
		GOOD N (%)	POOR N (%)			
<b>Occupation</b>	Farming	49 (49.0)	51 (51.0)	41.549	6	0.000
	Petty trader	19 (57.6)	14 (42.4)			
	Teachers	26 (100)	0			
	Civil servants	7 (100)	0			
	Carpenter/skilled workers	1 (100)	0			
	Retired civil servants	49 (74.2)	17 (25.8)			
	Dependants	39 (83.0)	8 (17.0)			
	None	40 (83.3)	8 (16.7)			
<b>Monthly income</b>	Less or equal to N10,000	78 (49.1)	81 (50.9)	59.917	7	0.000
	N10,001-N20,000	11 (91.7)	1 (8.3)			
	N20,001-N30,000	25 (96.2)	1 (3.8)			
	N30,001-N40,000	7 (100)	0			
	N40,001-N50,000	16 (100)	0			
	N50,001-N60,000	6 (100)	0			
	Above N60,000	6 (100)	0			

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**TABLE 6: WILLINGNESS TO HAVE CATARACT SURGERY IN SUBJECTS IN IKPOBA OKHA LGA**

Characteristic of respondents		Frequency (N)	Percentage (%)
Are you willing to have surgery	Yes	154	55.0
	No	126	45.0
If no, why?	Death	20	7.1
	Loss of sight	58	20.7
	Can still see clearly	32	11.4
	Not mature	7	2.5
	Too old for surgery	7	2.5
	Family not in support	1	0.4
	Religious belief	1	0.4
	Loss of sight	1	0.4
	High cost	29	10.4
	Can still see clearly	11	3.9
If yes, why have you not yet had surgery?	Daily task not impaired	6	2.1
	Not mature	27	9.6
	Too busy	15	5.4
	Not aware	32	11.4
	Does not know where	33	11.8

**TABLE 7: FACTORS AFFECTING ACCEPTABILITY OF CATARACT SURGERY IN SUBJECTS IN IKPOBA OKHA LGA**

CHARACTERISTICS		ARE YOU WILLING TO HAVE SURGERY?		Chi-square	Degree of freedom	p-value
		YES N (%)	NO N (%)			
Age group (yrs)	Less than equal to 50yrs	16 (72.7)	6 (27.3)	33.055	5	0.000
	51-60 yrs	53 (51.5)	50 (48.5)			
	61-70 yrs	52 (65.8)	27 (34.2)			
	71-80 yrs	32 (61.5)	20 (38.5)			
	81-90 yrs	1 (5.3)	18 (94.7)			
	Above 90 yrs	0	5 (100)			
Sex	Male	91 (60.7)	59 (39.3)	4.192	1	0.041
	Female	63 (48.5)	67 (51.5)			
Religion	Christian	154 (59.0)	107 (41.0)	24.913	1	0.000
	African tradition	0	19 (100)			
Educational status	None	64 (40.8)	93 (59.2)	33.096	3	0.000
	Primary	52 (78.8)	14 (21.2)			
	Secondary	22 (75.9)	7 (24.1)			
	Tertiary	16 (57.1)	12 (42.9)			

Higher age was associated with a greater willingness to have cataract surgery ( $p < 0.001$ ), male gender ( $p < 0.05$ ), Christian religion ( $p < 0.001$ ), and higher educational status especially primary and secondary levels of education, ( $p < 0.001$ ).

**TABLE 8: OTHER FACTORS AFFECTING ACCEPTABILITY OF CATARACT SURGERY IN SUBJECTS IN IKPOBA OKHA LGA**

CHARACTERISTICS		ARE YOU WILLING TO HAVE SURGERY?		Chi-square	Degree of freedom	p-value
		YES N (%)	NO N (%)			
Occupation	Farming	54 (54.0)	46 (46.0)	30.820	6	0.000
	Petty trader	12 (36.4)	21 (63.6)			
	Teachers	20 (76.9)	6 (23.1)			
	Civil servants	0	7 (100)			
	Carpenter/skilled workers	0	1 (100)			
	Retired civil servants	48 (72.7)	18 (27.3)			
	Dependants	20 (42.6)	27 (57.4)			
	None	20 (41.7)	28 (58.3)			
Monthly income	Less or equal to N10,000	82 (51.6)	77 (48.4)	58.092	7	0.000
	N10,001-N20,000	12 (100.0)	0			
	N20,001-N30,000	25 (96.2)	1 (3.8)			
	N30,001-N40,000	0	7 (100)			
	N40,001-N50,000	14 (87.5)	2 (12.5)			
	N50,001-N60,000	1 (16.7)	5 (83.3)			
	Above N60,000	0	6 (100)			

Teachers and retired civil servants were significantly more willing to have cataract surgery ( $p < 0.001$ ), and monthly income range <N10,000.00 to N30,000.00 were most willing to have cataract surgery ( $p < 0.001$ ).



### DISCUSSION

The overwhelming majority, 253(90.4%) had heard of cataract. This finding is similar to the 98% reported in Australia<sup>18</sup> and the 92.9% reported in a Hong Kong Chinese population.<sup>19</sup> This is much higher than in Nepal<sup>10</sup> where 57.8% were reported to have knowledge of cataract. The most common sources of information about cataract was from a family member (25%), television (17.1%), a neighbor (15.4%), from an ophthalmologist (13.9%) and from an operated patient (10.7%). This study supports the importance of word-of mouth advertising and television for transmission of information about cataract reported by other studies.<sup>10,11</sup> In this study, just over half (50.4%) knew that surgery was the treatment for cataract although 68.9% knew that cataract was curable. This is similar to the study in Makurdi, Benue State, Nigeria, where 65% were aware that surgical intervention was the answer to their visual dysfunction.<sup>14</sup>

Two hundred and two patients (72.1%) knew that the name of their eye condition was cataract but over 50% of these only got to know about the name of the disease less than a month before the study. This may be due to the public enlightenment campaign organized by the Department of Ophthalmology, University of Benin Teaching Hospital, three weeks before the commencement of the study. Two hundred and twenty two (79.3%) said they knew where the disease was treated. Of these, 208 (93.7%) said it was in the hospital while 14(6.3%) felt the traditional healer was the appropriate person to treat cataract. This study showed that some people still believe that traditional treatment, usually by couching is the preferred method of treatment of cataract. This supports the high couching coverage of 12% for reported in Plateau State, Nigeria.<sup>13</sup>

Older age ( $p<0.01$ ), female sex ( $p<0.01$ ), African traditional religion ( $p<0.05$ ), higher educational status ( $p<0.01$ ), civil servants and teaching occupation ( $p<0.01$ ) and higher monthly income ( $p<0.01$ ) were all significantly associated with good knowledge of cataract and cataract

treatment. Patients who are older are more experienced and are more likely to have heard of cataract than the younger patients. Furthermore, older patients are also more likely to have visual impairing cataract and are more likely to have sought a solution to their visual problem and therefore are more likely to have been educated on cataract. Knowledge was better among subjects who practiced African traditional religion than Christians. This may be partly due to age, since the majority of these patients belong to the older age group. As expected, higher educational status, subjects in the higher income groups and the higher occupations in this study which include teachers and civil servants had significantly better knowledge. All these are likely to be related to the higher educational status of these subjects which makes them generally more knowledgeable.

One hundred and fifty four subjects (55%), accepted to have surgery. This is much lower than in South India where acceptance of surgery was high (91.7%).<sup>20</sup> It is however higher than the study conducted in five rural hospitals in Guangdong, China, where acceptance of surgery was low (31.3%).<sup>21</sup> The major reasons for not accepting surgery was fear of losing eyesight after surgery (20.4%), those that could still see clearly (11.4%), and fear of death (7.1%). This is similar to the study in rural South Africa, where fear of surgery and a fatalistic attitude to the inevitability and irreversibility of blindness in old age were the main reasons for failure to accept surgery.<sup>22</sup> Interestingly, high cost of surgery which was the main reason for not accepting cataract surgery in other studies from Nigeria<sup>12,13,14,16</sup>, Ghana<sup>23</sup> and Malawi<sup>24</sup>, was not given as a reason for not accepting surgery in this study. This may be because cataract surgery is now frequently provided free in various outreach programs and some may have heard jingles on television and radio announcing this. In addition, many of these patients are dependents and have children or other family member who they expect to pay for their medical bills. However, when those who accepted surgery, but had not yet had it were asked for the reason for the delay, high cost became the third major reason given.

In conclusion, the overwhelming majority of subjects had heard of cataract. Majority of the subjects have poor knowledge of cataract and its treatment. Majority of the subjects had immature cataract and were willing to have cataract surgery. Fear of loss of sight, followed by those who could still see clearly and fear of death, were the most common reasons for unwillingness to have surgery

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