

Cataract Surgical Treatment: Patients' Perception of Constraints to Utilization at Enugu.

Chigorom A. Anusiem^{1,2}, Chikezie A. Nwankwor¹, Chikere A. Anusiem^{3*}

¹Department of Health Administration and Management, Faculty of Health Sciences and Technology, College of Medicine, University of Nigeria Enugu Campus, Nigeria.

²Nursing Services Division, Eye Clinic, University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu, Nigeria.

³Department of Pharmacology and Therapeutics, College of Medicine, University of Nigeria Enugu Campus, Nigeria.

*[Corresponding author: Dr Chikere Anusiem, Department of Pharmacology and Therapeutics, College of Medicine, University of Nigeria Enugu Campus, Nigeria.]

Abstract

Objective: This study investigated the current constraints to utilization of cataract surgical services at Enugu Nigeria from patients' perspective. Cataract is the leading cause of blindness worldwide and constitutes a major public health burden. Despite the therapeutic efficacy of cataract surgery, and efforts made in recent years to improve access to it, utilization has remained suboptimal

Methods: This was a descriptive cross-sectional study that employed structured pre-validated questionnaire as research tool. The protocol was approved by a hospital Ethics Committee. The respondents were adult patients of both genders who gave informed consent. Data analysis was carried out using Statistical Package for Social Sciences (SPSS Inc., Chicago, IL).

Results: A total of 400 subjects: 210 males (52.5%) and 190 females (47.5%) age range 45-78years fully completed the questionnaire. Most of the respondents were traders (29.5%) and civil servants (28.0%). The study revealed that majority of the respondents (92.4%) were aware that the hospital rendered cataract surgical services. Direct high cost (35%), lack of awareness (25%), and fear of surgery and outcomes of surgery were the main factors impeding utilization of cataract surgical services.

Conclusion: Cost and fear of surgical treatment were the two major factors found to be hindering people from accessing available cataract surgery services. Government should work out appropriate health insurance schemes to cover every citizen so that cataract patients can easily access cataract treatment without any financial constraints. Awareness of the availability and safety of the services should be further increased using various communication media.

Key words: Cataract, Utilization, Surgical services, Blindness, Treatment.

Date of Submission: 18-02-2020

Date of Acceptance: 02-03-2020

I. Introduction

Cataract is a major public health problem all over the world. It is cloudiness or opacity of the lens within the eye. The opacity reduces the amount of incoming light that reaches the retina and therefore impairs vision¹. About 2.2 billion people in the world have visual impairment. Epidemiological studies have shown that cataract and uncorrected refractory errors are the two commonest causes of visual impairment worldwide. Out of this large number there are 20-39 million cases of blindness with 51% being as a result of cataracts¹. Cataract is therefore the leading cause of blindness globally²⁻⁴.

In Nigeria as much as about 400,000 residents have operable cataracts (i.e. visual acuity of <6/60 attributable to cataract)⁵. Cataract can affect people of both genders and has a higher prevalence in middle and low-income countries⁶⁻⁷.

Etiological factors: Age-related cataract constitutes more than 80% of all cataracts. Most people above the age of 65 years show some signs of cataract. Therefore, a large proportion of the burden of cataract visual impairment and cataract blindness is borne by elderly people⁸⁻⁹. Other causes of cataracts include metabolic diseases such as diabetes mellitus, congenital anomalies, radiation, drug toxicities, trauma, and complications of other eye diseases¹⁰⁻¹².

Socio-economic burden: Cataract imposes enormous burden, on the affected person, in terms of functional disability, loss of gainful employment, loss of status and self-esteem, and considerable economic loss. It compromises the individual's ability to appreciate beauty, capacity to read, and ability for independent living, with resultant lowering of quality of life. Besides, visual impairment and blindness make the affected individual

prone to falls and injury resulting in self-imposed sedentary existence¹³. The entire family also shares in the difficulties imposed on a member of the household by cataract blindness.

Treatment: The treatment of cataract is surgery. The best result is obtained by intraocular lens replacement¹⁴. Studies have shown that out of all healthcare interventions, cataract surgery is among the most cost-effective^{12, 15}. It is a therapeutically effective, safe and cost effective treatment.

Utilization of available curative service: World Health Organization recommends 500 cataract surgeries per million human population. Although some reports have shown that cataract rates have increased in recent years around the world, and that there has been improvement in treatment outcome, utilization of cataract surgical services has remained suboptimal, giving rise to high cataract backlog^{7,13,16,18}.

There has been research reporting factors that affected uptake of cataract treatment more than a decade ago^{19, 20} but it has become imperative to examine the current constraints of low utilization of cataract treatment services hence this study. We carried out a study to investigate the factors influencing the utilization of cataract surgical treatment services based on the views of hospital patients at Enugu Nigeria. The outcome would be expected to be very helpful to health services planners, hospital managers, clinicians, and other stakeholders in the health sector.

II. Materials and Methods

The study was a cross-sectional descriptive hospital based research. For the site of the study, multistage purposive sampling was adopted. One out of the two teaching hospitals at Enugu was chosen for the study. Out of the several out-patient clinics in the hospital, two clinics that were known to be most relevant to the study were chosen, namely the Eye clinic and the Diabetic clinic of the hospital. The Diabetic clinic attends to diabetics many of whom are adults. Adults and diabetics have high incidence of cataracts¹⁸. All adult patients aged 40 years and above who attended either the Eye clinic or the Diabetic clinic of UNTH during the period of the study and who gave verbal consent were eligible to participate in the study. Consecutive patients who met the enrolment criteria were enrolled after giving informed consent, until the sample size was reached.

Sample Size determination: About 70 patients, on the average, attended the eye clinic of the hospital on working days. As clinic holds five times in a week, on the average, about 1400 patients attended the eye clinic in a month. The diabetic outpatient clinic also recorded about 60 patients on the average clinic day. This clinic held once per week and so 480 patients on the average attended the clinic monthly. This brought the total population to about 1,880 per month.

The biostatistical formula for sample size evaluation for an indefinite population was adopted thus:

$$n = \frac{z^2 P(1 - P)}{d^2}$$

Where:

n = sample size

z = static for a level of confidence

P = expected prevalence or proportion on percentage of population picking

d = precision in confidence interval, expressed as decimal i.e. (error allowed by researcher).

Therefore, assuming the proportion to be 55 (i.e. 0.55 maximum) and we desire 95% confidence level and $\pm 5\%$ precision, the resulting sample size was:

$$\frac{Z^2 P (1 - P)}{(0.05)^2}$$

Z = 1.96

P = 0.55 (53%)

d = 0.05

$$\begin{aligned} n &= 1.96^2 \frac{(0.53)(1 - 0.53)}{0.05^2} \\ &= \frac{3.8146 \times 0.53(0.47)}{0.05^2} = \frac{2.036048 \times 0.47}{0.0025} \\ &= \frac{0.9569426}{0.0025} = 382.77704 \cong 383 \end{aligned}$$

Additional 37 people were added to allow for non-utilizable (poorly filled) questionnaires giving a total number of research participants of 420.

Method of Data Collection: A well-structured and pre-validated self-administered questionnaire was used. The questionnaire explored the respondents' knowledge of what cataract means, their awareness of the availability of effective hospital-based treatment, and their views on factors that could militate against patients' uptake of the cataract surgical treatment services of the hospital.

Data analysis was carried out using Statistical Package for Social Sciences (SPSS) computer software version 22 (SPSS Inc., Chicago, IL). Statistical tests for significance of observed inter group differences were performed using the Chi –square test for categorical variables with significance of differences in variables decided at $P < 0.05$.

Ethical considerations: The research protocol was approved by the Research Ethics Committee of the teaching hospital.

III. Results

Out of 420 questionnaires that were distributed, 400 copies were returned. Table 1 shows that majority (49.3%) of the patients were aged between 51 and 60 years. Gender distribution was approximately equal (Female: Male; 47.55%: 52.5%). About 62.0% of the respondents were married. Most of the patients (85.5%) were educated above primary education level and either civil/public servants (28.0%) or business men/women (29.5%).

Knowledge of cataract among respondents

As presented in Table 2, out of the 400 respondents, 371 (92.8%) had heard of cataract. The major sources of information on cataract were mass media 100 (27.0%) and 98 (26.4%). Majority, 156 (39.0%) had the correct knowledge that cataract means an opacity in the lens of the eye, or white patch on the black part of the eye. About 322 (80.5%) knew that cataract could lead to blindness and 236 (65.2%) stated surgery as a sure way of treating cataract.

Association between socio-demographic characteristics and awareness of cataract surgical services at the teaching hospital

As shown in Table 3 there were no statistically significant association between socio-demographic characteristics including age in categories ($\chi^2 = 4774$, $p = 0.092$), sex ($\chi^2 = 0.171$, $p = 0.679$), marital status. ($\chi^2 = 2.800$, $p = 0.424$), educational level ($\chi^2 = 1.609$, $p = 0.657$), and occupation ($\chi^2 = 1.644$, $p = 0.801$) with awareness of the cataract surgical services at the hospital. .

Factors that impede utilization of Cataract surgical services at the hospital

Table 4 shows the factors that, according to the respondents, impede utilization of cataract surgical services. These are purely their views that may be right or wrong, but quite informative. The table shows that direct high cost (35%) was considered the main factor that impeded uptake of cataract surgical services. Other factors highlighted by participants were lack of awareness (25%) and fear of undergoing surgery (24%).

IV. Discussion

Majority of the respondents were educated to at least secondary school level and all of them were adults. They were therefore presumably able to express their own personal views, right or wrong, in responding to the questionnaire. The study participants included traders, civil servants, retirees, and farmers, and many were low-income earners (Table 1). Ninety two percent of them had heard about cataract and their sources of information were mainly their contacts with hospital and hospital workers as well as from the mass media. This observation should encourage healthcare workers and hospital managers in their laudable efforts to educate patients about various health conditions using various means and media.

The large majority (80.5%) knew that cataracts could cause blindness and 65.2% knew that the treatment of cataract is by a surgical operation.

One hundred and forty (35%) of respondents considered the cost of surgical treatment as the key militating factor against uptake of cataract surgical service while 25% and 24% thought the key constraint was lack of awareness of the availability of surgical service and fear of surgery respectively.

Cost, in particular, has consistently been shown by several studies to be a major constraint to accessibility of cataract surgical services in developing countries. Merahi *et al* identified cost as the single most important barrier to cataract surgical uptake in central Ethiopia ⁷; as did Osahon *et al* in some other part of Nigeria several years ago ²¹. Lack of health insurance is therefore considered a key constraint to access to effective treatment of cataracts. This applies also to some low income American subpopulations that lacked health insurance and also had reduced access to cataract treatment due to the cost of treatment ²².

However, Upreet Dhaliwal *et al* in their own study identified attitudinal barriers, rather than issues of physical accessibility and cost, as the main barriers to cataract surgical service uptake ²³. He and his colleagues

however reported also fear of going in for a surgical operation, lack of service awareness, and not having someone that will accompany them to hospital as militating factors.

Three hundred and sixty four respondents (92.4%) in this study were aware that the Teaching hospital provides surgical treatment for cataract. This finding does not agree with another study carried out about one decade earlier that observed that the level of awareness was so low that it constituted a major constraint to uptake of cataract surgery in Enugu metropolis as was also the case about the same time in some parts of rural China^{24, 25}. The reason for the high level of awareness documented in our study might be explained by more efforts that had been made over the recent years to educate patients and members of the community alike about cataract and the availability of treatment facilities for it. Again, this study, being hospital-based, involved respondents who as patients attended the Eye and Diabetic clinics respectively where health talks and discussions with healthcare workers occurred. This assumption might further be strengthened by the fact that 98 (26.4%) of the respondents heard about cataract from health talks in the clinic, while 91 (24.5%) had previously been diagnosed as cataract patients.

In general, there were no statistically significant association between the respondents' socio-demographic characteristics and the various responses as categorized in the result tables.

V. Conclusion

Cost and fear of surgical treatment are the two major factors found to be hindering people from accessing available cataract surgery services. For cataract backlog to decline there has to be an increase in utilization of the treatment services, which will amount to increase in cataract surgery rates. Universal health insurance covering surgical treatment particularly for elderly people and more enlighten campaigns are advocated as panacea to suboptimal uptake of cataract treatment.

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Table no 1 shows socio-demographic data of respondents

Variable	Frequency(n=400)	Percent
Age in categories (years)		
50 and below	58	14.5
51-60	197	49.3
61 and above	145	36.2
Gender		
Female	190	47.5
Male	210	52.5
Marital status		
Single	20	5.0
Married	248	62.0
Divorced	13	3.2
Widowed	119	29.8
Educational level		
FLSC and below	58	14.5
SSCE	155	38.8
NCE/Diploma	113	28.3
B Sc and above	74	18.0
Occupation		
Farming	63	15.8
Trading	118	29.5
Civil servant	112	28.0
Retiree	85	21.2
Others	22	5.5

Table no 2 shows Respondents' Knowledge of cataract.

Variable	Frequency	Percent
Ever heard about cataract		
Your source of information		
n = 371		
Health talk in the clinic	98	26.4
Outreach program	50	13.5
Friends and relatives	32	8.6
Mass media	100	27.0
I am a diagnosed cataract patient	91	24.5
Your understanding of cataract		
n = 371		
Not seeing well at night	45	12.1
Not being able to see near objects well	117	31.5
Opacity of the lens of the eye, or white patch on the black part of the eye	156	42.0
Not being able to read small prints	47	12.7
No idea	6	1.7
Awareness that cataract could lead to blindness		
n = 400		
Yes	322	80.5
No	59	14.8
Not sure	19	4.7
The only sure way of treating cataract		
n = 362		
Instillation of eye drops	73	20.2
An eye operation (surgical operation)	236	65.1
Taking of oral tablets	35	9.7
Using of traditional eye medicine	9	2.5
Cataract is part of normal ageing process and cannot be treated	5	1.4
No idea	4	1.1

Table no 3 shows the Association between socio-demographic characteristics and awareness of cataract surgical services

Variable	Awareness of cataract surgical services of the hospital (n=400)		Test statistics χ^2	p value
	Yes	No		
	Frequency (%)	Frequency (%)		
Age groups (years)				
50 and below	50 (12.5)	8 (2.0)		
51-60	181 (45.3)	10 (2.5)	4.774	0.092
61 and above	139 (34.7)	12 (3.0)		
Gender				
Female	172 (43.0)	13 (3.3)	0.171	0.679
Male	198 (49.5)	17 (4.2)		
Marital status				
Single	20 (5.0)	0 (0.0)		
Married	225 (56.3)	17 (4.3)	2.800	0.424
Divorced	12 (3.0)	1 (0.2)		
Widowed	107 (26.7)	12 (3.0)		
Educational level				
FLSC and below	52 (13.0)	5 (1.3)		
SSCE	141 (35.3)	10 (2.5)	1.609	0.657
NCE/Diploma	101 (25.3)	11 (2.8)		
B.Sc. and above	70 (17.5)	4 (1.0)		
Occupation				
Farming	57 (14.2)	6 (1.5)		
Trading	109 (27.3)	11 (2.8)		
Civil servant	106 (26.5)	7 (1.7)	1.644	0.801
Retiree	78 (19.5)	5 (1.3)		
Others	20 (5.0)	1 (0.2)		

Table no 4 shows the Factors that impede utilization of cataract surgical Services in the Hospital

Variables	Measurement	Frequency n = 400	%
Opinion pool from all respondents on factors that impede people from utilizing cataract surgical services	High cost	140	35%
	Cataract surgical outcomes are usually not good	12	3%
	Not aware of the availability of cataract surgical services	100	25%
	Normal ageing process	12	3%
	Fear of eye surgery	96	24%
	Lack of care taken during hospitalization	10	2.5%
	Indirect cost is high	30	7.5%

Dr Chikere Anusiem, et al. "Cataract Surgical Treatment: Patients' Perception of Constraints to Utilization at Enugu." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), 19(2), 2020, pp. 27-32