Socio-demographic Determinants of Patients Accessing Free Cataract Surgical Services in Uyo, Nigeria

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ABSTRACT

Globally, cataract blindness is the commonest, yet surgical intervention as a means of treatment is one of the most rewarding surgical interventions known because of the expected good visual outcome. Sadly, there are certain undetermined factors militating against accessing cataract surgeries. In our locality, no study has explored these factors. The objective of the study was to determine socio-demographic factors common to patients who had free cataract surgeries during an Eye Camp in Uyo, Nigeria. The study design was prospective and non-randomized of individuals who had free cataract surgeries during the period. During the one month program, Two Hundred and Fifty Three patients (n = 253) were operated upon; 146 (57.7%) were males and 107 (42.3%) were females with a mean age 59.50±14.1. Most participants were rural dwellers (152; 60.1%). Financial handicap was the commonest reason for delay in accessing cataract surgical services. In conclusion: Poor financial status of the participants was the main reason for delay in accessing treatment for cataract. Other identified barriers to cataract service uptake were fear of surgical outcome and non-maturity of cataracts.

Keywords: Socio-demographic determinants, Cataract-blindness, Uyo

INTRODUCTION

Cataract is any opacity of the crystalline lens with or without associated visual disturbances. Blindness from cataract can be described to the layperson as "white" blindness as against "black" of glaucoma to which it might be confused. This apt aphorism is derived from pupillary appearance of individuals with cataract and glaucoma respectively. Cataract blindness sharply contrasts that of glaucoma being reversible with a surgical procedure that has evolved to maximize visual outcome while shortening recovery time.

Cataract is responsible for 33% of the visual impairment worldwide and is the single most important cause of blindness affecting 51% of the global population[1]. Available data from the Nigerian National Eye Survey[2] for Blindness and Visual Impairment showed cataract as the commonest cause of severe visual impairment and blindness being responsible for 45.3% and 43.0% of cases respectively. Surveys in Latin America and the Caribbean islands showed that cataract is the leading cause of blindness and visual impairment, with 47%-87% of individuals being bilaterally blind[1,3].

Cataract surgical rate (CSR), the number of cataract operations performed per year per million population, is not widely reported among Nigerian population and as such it has been difficult to establish what factors influence cataract service uptake. Unless regional CSR increases considerably, the VISION 2020 goal of eliminating avoidable vision loss from cataract will not be met. Based on studies from India, China and Paraguay, CSR is not wholly based on the socio-economic development of a country[4-7]. Across Latin America[8,9], the CSR ranges from approximately 900-6,000, with an average of 2,672. This surpasses the World Health Organization (WHO) recommendation of 2,000 per million population set to clear cataract backlog[10]. In many regions of Africa, however, cataract surgical rates are less than 500 per million population despite availability of quality cataract services[10-12]. Therefore, there is a need to determine factors that influence uptake of available health care to enhance policy making and program planning. With dwindling Nigerian government earnings from petroleum products, limited health resources will be properly channeled if necessary information is available to aid allocation. This study's aim was to determine the socio-demographic parameters among a group of participants who accessed a free cataract surgical outreach program. The knowledge from this study will aid Government, individuals or groups who might want to provide similar services in future.

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MATERIALS AND METHODS

This was a cross-sectional non-randomized study conducted among individuals who voluntarily sought free cataract surgical services after a state-wide media advertisement of a free Eye camp in January 2016. The location of the study was in the state capital. For the purpose of categorization, individuals from the state capital, Local Government Headquarters and a few designated towns based on availability of social amenities, were considered urban dwellers. Other people outside these definitions were categorized as rural dwellers.

All attendees of the screening program were registered. Thereafter, there was identification of those with operable cataracts and referrals of those with complicated cataracts for further assessments in the base hospital of the researchers. The diagnosis of cataract was based on torchlight exam and distant direct ophthalmoscopy. Vision was assessed with Snellen's E chart at 6 meters in a well lite environment. The inclusion criteria were individuals with VA of 6/60 or worse traceable to cataract. Those with ocular co-morbidities such hypertensive retinopathy, and glaucoma having significant cataract were also operated upon having been told that prognosis was guarded. Patients were explained to in the local language about the purpose and procedure of the study.

Due to non-availability and prohibitive cost of hiring, biometry was not done. Choice of intraocular lens (IOL) was based on the available IOL and age of patient. For older patients overall hypermetropia was the target to enable distant vision for the mostly uneducated population. Myopia was the optical aim for the younger participants who might want to read without optical aids. Cataract surgeries were done by 4 surgeons with varying degrees of competences.

Questionnaire to answer research questions on socio-demographic parameters was designed and data collected included age, gender, rural or urban residence, education, and occupation. A verbal section surveying the barriers to access or reasons that delayed access to cataract surgery was devised from the existing literature. It was developed in English and a translator for the local tribal language was used when necessary. The questionnaire was administered in interviews conducted by ophthalmic nurses or ophthalmic assistants who have been involved in similar studies.

Ethical clearance was not obtained from any institutional Ethical Review Board but Informed written consents were obtained from all subjects and study complied with the tenets of the Helsinki Declaration on research in Human Subjects. Data obtained was coded and fed into Statistical Package for the Social Sciences version 20.0 (SPSS, IBM Corp., Armonk, NY, USA). For descriptive statistics, frequencies and percentages were used for categorical variables in univariate analyses. In bivariate analyses, using p value as inferential statistics, value less than 0.05 at 95% confidence interval was considered statistically significant.

RESULTS

A total of 253 patients had free cataract surgery of whom 146 (57.7%) were males and 107 (42.3%) were females. The youngest participant was 14 years and the oldest 83 years giving a mean age of 59.50±14.1 (Table 1). Most participants were rural dwellers (152; 60.1%). Figures 1 and 2 show monthly earnings and duration of visual impairment, respectively before cataract surgery was received. Tables 2 to 4 show reasons for delay in being operated upon, educational and occupational distribution of study subjects respectively.

Table 1: Age and Sex Distribution of Subjects

Age Groups (Years)	Gender			
	Male		Female	
	Frequency	%	Frequency	%
Less than 20	2	0.8	1	0.4
20 to less than 40	20	7.9	7	2.8
40 to less than 60	49	19.4	35	13.8
60 and above	75	29.6	64	25.3
Total	146	57.7	107	42.3

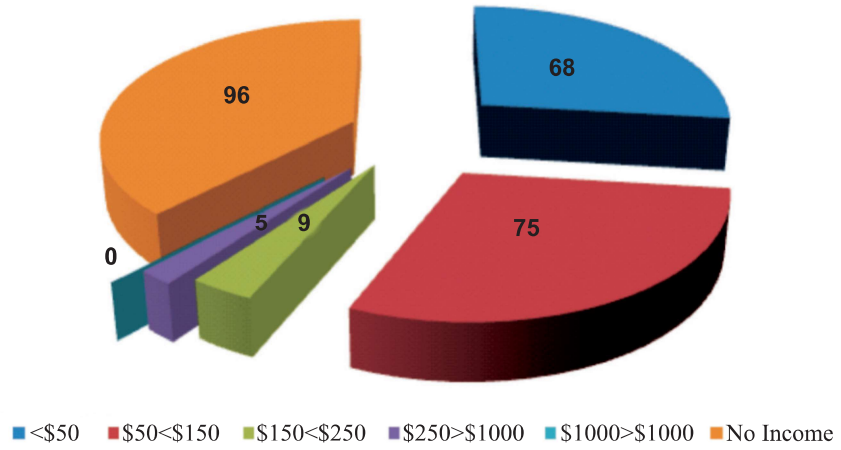

Figure 1: Monthly earnings of the study population

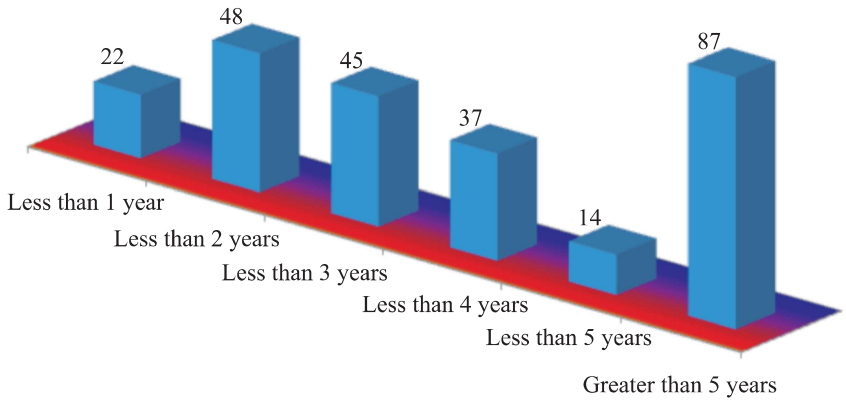

Figure 2: Average duration of visual impairment from cataract

Table 2: Reasons for delayed presentation

Reasons for delayed presentation	Frequency	Percent
There was no money	216	85.4
I was afraid of surgery	10	4.0
Doctor said it was not mature	17	6.7
Was initially painless but now painful	01	0.4
There is no reason	01	0.4
I was preparing to come to hospital	01	0.4
I had high blood pressure	02	0.8
I did not know I had cataract	03	1.2
I live far from hospital	01	0.4
I had thought vision would improve	01	0.4
Total	253	100.0

Table 3: Distribution based on level of education

Education status	Frequency	Percent
Primary	118	46.6
Secondary	56	22.1
Tertiary	27	10.7
None	52	20.6
Total	253	100.0

Financial handicap was the commonest reason for not going early to hospital for treatment. Over 90% of the patients waited for more than one before receiving cataract surgery. This corresponds to the income of the study population as over 94% earned less than $250 or no income at all. About a quarter had no formal education with another 47% having only elementary education. Petty trading and subsistence farming were the commonest forms of occupation.

Reasons for surgery delay was cross tabulated with other independent variables in bivariate analyses. There was statistically significant association with age (P<0.002 at 95% confidence interval). All p values were greater than 0.05 with monthly income, sex, occupation, education and residence, meaning there was no statistically significant association with these variables.

DISCUSSION

In developed countries, visual impairment due to cataract is not a major issue[13-17]. However, the same cannot be said of developing countries where the burden of cataract blindness is an ever present challenge despite concerted efforts by government and various Non-governmental organizations to improve on a very low CSR. Factors such as affordability, far-to-reach communities and poor access to information are reasons for cataract blindness[18-20].

Surgical fees are often reported as barriers to undergo cataract surgery. Similar to other findings from Nigeria[21], The Gambia[22],Nepal[23], and India[24], financial constraints ranked first, constituting over 85% of responses as the reason for not having or delaying cataract surgery in study participants. The average cost of Extra-Capsular Cataract Extraction (ECCE) in Nigeria is Fifty thousand Naira ($150) in government hospitals. Private Eye care facilities on the other hand charge higher to break even in running costs. Where phacoemulsification is offered, the cost is often prohibitive. These expenses are out of reach to the generality of the populace. In addition, poor access roads and lack of access to educative information on treatment options for cataract, also contribute to patients not seeking treatment early.

Table 4: Distribution based on occupation

Occupation	Frequency	Percent
Civil Servant	23	9.1
Trading	67	26.5
Farming	62	24.5
Artisan	20	7.9
Minor	01	0.4
Retiree	44	17.4
Dependant	22	8.7
Student	05	2.0
Clergy	3	1.2
Unemployed	06	2.4
Total	253	100.0

While cost has been a major reason why individuals do not access cataract services even when available, population-based studies from India indicated that cataract acceptance rates were low even when surgery was free and transportation was provided[6,25-27]. In this study, there was no statistically significant relationship between the reason for not accessing cataract surgical services and “There was no money” or literacy level. Similar findings were reported in a recent study in Ghana[12].

Studies have suggested that fear of surgery and a low perceived need for better sight contribute more significantly to not accessing cataract surgical services. Even when free surgical services are offered, there can be a lack of demand and low utilization[28-30]. Only few subjects in the current study were deterred by fear and perceived little need for improved vision. Good surgical outcomes with improved vision may have doused doubts leading to less fear. Manual Small Incision Cataract Surgery (MSICS) is widely used in our locality with significant success rates. It is possible that those who have been previously operated upon with good outcomes serve as counselors and encouragement to friends and acquaintances.

Accessibility to health facilities was not a significant cause of delay in service uptake in this study. Thus, far distance from a hospital or residence away from a main road was cited infrequently as barriers to early uptake of cataract surgical service. This has also been reported by other authors[6,25].

Age as a barrier to cataract service uptake has not been reported by available population studies. This study found a statistically significant association in a bivariate analysis of age and reasons for delay in uptake of surgery. This may not reflect the true situation in the community as statistical analysis may have skewed the outcome, the study being done in a relatively homogenous age group of geriatrics (88.1% being 40 years and above). On the hand, it is possible that certain age-related co-morbidities such as lack of family support, and psycho-social factors may have hindered service uptake.

Non-randomization and purposive sampling technique used may have constituted some limitations to this study. However, the study was conducted among the desired population it was intended being individuals that have not accessed available healthcare services. It is concluded that a hospital-based study to answer similar research questions may supply additional information for the purpose of increasing CSR and clearing cataract backlog in underserved communities of developing countries. Based on the findings, therefore, adequate interventions could be offered to improve the situation in the locality, its environs and similar settings in developing nations.

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