

Original Research Article

Socio-demographic factors of patients who underwent free cataract surgery in Kafanchan, Nigeria

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ABSTRACT

Background: The aim of this study is to determine the socio-demographic profile of people accessing cataract surgery at a free cataract surgical Camp in Kafanchan.

Methods: One hundred and nine participants had manual small cataract incision surgery with intraocular lens over a three-month period (September to November 2018) and were followed up for two months. Visual acuity was assessed at first day and two months post-op along with refraction and best corrected visual acuity. Their socio-demographic features along with duration of lost vision and cause of delay in cataract surgery were also noted.

Results: Fifty-five males and fifty-four females had cataract surgery and were followed up for two months post-op. Fifty (45.9%) had no formal education while fifty-nine (54.1%) had formal education. Among those with formal education 59% (34) were males while 41% (20) were females. Majority of participants earned less than two hundred and fifty thousand naira (six hundred and twenty-five US dollars) annually. Eighty-two (75%) of participants were Christians and 71 (65%) lived in rural areas. Sixty-five (60%) had lost vision in the index eye more than one year prior to presentation for surgery and the main reason in this study for delay in having cataract surgery was immaturity of the cataract.

Conclusions: Some socio-demographic factors are barriers to cataract surgery.

Keywords: Cataract surgical camp, Free cataract surgery, Kafanchan, Socio-demographic factors

INTRODUCTION

The commonest cause of blindness and visual impairment worldwide is cataract with estimated 37 million blind in 2002 from cataract.¹ Blindness burden from cataract is more in remote communities of developing countries, who also have high backlog of un-operated cataract.^{2,3}

In Nigeria, cataract causes 42.9% of blindness with majority of the cataract blind not able to have surgery.⁴ Challenges in accessing cataract surgical care could be due to individual, environmental or factors associated with the health system.⁵ Free cataract surgical outreach programs are targeted at increasing the number of cataract surgeries performed thereby reducing the cataract

backlog.⁶ However, with increased availability of quality surgical services cataract surgical rate in many regions of Africa is still lower than the 2000 per million advocated by the World Health Organization.⁶⁻⁸ Therefore, there is need to determine factors that influence uptake of available cataract surgical services to guide program planning and policy making.

Studies from some developing countries has identified cost, old age, coping ability, lack of transport and long distance from hospital as barriers to up-take of cataract surgical services.^{9,10}

It was in view of these challenges that the Federal Government of Nigeria in collaboration with

ophthalmologists in Nigeria decided to sponsor 300 free cataract surgeries in each of the 36 states including the Federal Capital Territory. This study was done to identify the socio-demographic features of people undergoing free cataract surgery in Kafanchan so as to provide baseline data for similar programs by groups or individuals in the future.

METHODS

Study design and setting

It was a descriptive, cross sectional, non-randomized study of consecutive patients undergoing cataract surgery at a free cataract outreach camp. Sir Ibrahim Patrick Yakowa General Hospital (SIPYGH) Kafanchan was chosen as the Centre for the southern senatorial zone of Kaduna State which consists of 7 local government areas (Sanga, Jema’a, Kaura, Zangon Kataf, Jaba, Kagarko and Kachia). Kafanchan town is about 207km from Kaduna the State capital in north west Nigeria. The hospital provides secondary health and eye care services including cataract surgical and refraction services for the southern part of Kaduna State. About 200-300 cataract surgeries are done in this facility yearly. The surgeries in this study were done in 4 batches over a three months period (September to November) since all the cataract cases could not be recruited at once. The team consisted of 2 Ophthalmologist, 5 Ophthalmic Nurses, 2 optometrist and 2 Medical Assistants.

All those presenting for the screening were examined with a pen torch light and direct ophthalmoscope (Heine Germany, BETA 200 US Pat. 4.963.014) in some cases.

Those with operable cataract were registered and their visual acuity (VA) assessed using Snellen “E” chart in a well-lit environment 6m from the chart. In those with bilateral cataract only one eye was operated (Eye with denser cataract). Those 40 years and above with VA <6/60 from operable cataract, well controlled diabetes and Hypertension were included in the study, while those with traumatic cataract, coexisting glaucoma, poorly controlled systemic diseases and those that could not complete follow-up were excluded. They all had manual small incision cataract surgery (MSICS) with intraocular lens (IOL). Surgery was done by the two Ophthalmologist who are competent in doing the procedure. The choice of IOL was based on the patient’s need since biometry was not available. Presenting VA first day post-op and two months post-op were assessed along with refraction at two months post-op. VA was done by an experienced ophthalmic Nurse while refraction was done by the optometrists.

Data collection and analysis

A Questionnaire was used to record information on socio-demographic factors such as age, gender, education rural or urban residence and annual income. Another section

was used to record information on duration of lost vision and cause of delay in cataract surgery. Questionnaire was prepared in English but can be translated to the local dialect when the need arises. It was administered by nurses experienced in similar studies. Ethical clearance was not obtained from any Ethical Review Board but informed written consent was obtained from all participants and the study adhered to the tenets of Helsinki Declaration. The WHO standard cataract surgery outcome was used, where 6/6 – 6/18 was regarded as good while borderline was <6/18 – 6/60 and <6/60 was regarded as poor.

All information was entered into statistical packages for social sciences 20 (SPSS 20, IBM, corp; Armonk, NY, USA) and analyzed.

Operational definitions

- Cataract: dense opacity of the lens that causes vision to be less than 6/60.
- Cataract blindness: presenting visual acuity of less than 3/60 in the better eye due to lens opacity.
- Operable cataract: cataract in which cataract surgery is expected to restore vision.
- Cataract backlog: number of unoperated cataracts awaiting cataract surgery.
- Uptake of cataract surgical services: number of people with cataract that utilize cataract surgical service.
- Rural area of residence: residence away from the town of local government headquarter.
- Urban area of residence: residence within the town of local government headquarter.

RESULTS

One hundred and sixteen (116) patients were recruited and had cataract surgery between September and November 2018 but one hundred and nine (109) completed the follow-up giving an attrition rate of 94%.

Age-sex distribution

A total of 109 patients were operated and followed up for 2 months post- operative period. There were 55 males and 54 females with a male to female ratio of 1.02:1. Their ages ranged from 40-80years with a mean age of 64.4±7.26 years. The age-sex distribution is as seen in Table 1 below.

Table 1: Age and gender distribution of population.

Age Group (years)	Sex		Total (%)
	Male (%)	Female (%)	
40-50	0 (0)	2 (4)	2 (2)
51-60	5 (9)	3 (6)	8 (7)
61-70	18 (33)	18 (33)	36 (33)
> 70yrs	32 (58)	31 (57)	63 (58)
Total	55 (100)	54 (100)	109 (100)

More people were operated at >70 yrs than other age groups with 32 males (58%) and 31 females (57%) operated at more than 70 years of age. Only 10 patients (9%) out of 109 were operated at age 40-60 years.

Educational status

From the result, 50 (45.9%) had no formal education while 59 (54.1%) had formal education. Among those with formal education 59% (34) were males and 41% (20) were females (P>0.05). While 31 (28.4%) had primary education only, 18 (16.5%) had up to secondary school education and 10 (9.2%) had tertiary education. Among men 35 (63.6%) were literates while among women only 24 (44.4%) were literate. Eleven men (31.4%) had secondary education while 7 women (29.2%) had secondary education with only 6 men (17.1%) and 4 women (16.7%) attending tertiary education.

Table 2: Educational distribution according to sex.

Education	Male	Female	Total
No Education	20	30	50
1 ^o	18	13	31
2 ^o	11	7	18
3 ^o	6	4	10
Total	55	54	109

Annual income

In this study 80 people (73.4%) earned less than 250,000 naira (<US \$625) annually 19 (17.4%) earned 500,000 naira (US \$1350) annually. While only 10 (9.2%) earned more than 500,000 naira annually (> US \$1350) as seen in Figure 1.

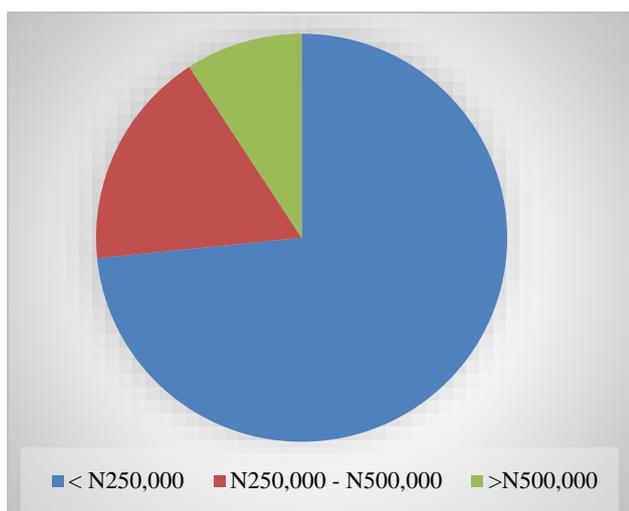


Figure 1: Annual distribution of income.

Among those who earned less than 250,000 naira annually (US \$625), women were 64 (57.5%) while among those who earned more than 500,000 naira annually (US \$1350) women were only 20 (20%).

Table 3: Sex distribution of annual income.

Amount (Naira)	Males	Females	Total
< 250,000	34	46	80
250,000	13	6	19
>500,000	8	2	10
Total	55	54	109

Place of residence

Sixty-five percent (60) reside in rural area while 35% (49) reside in urban area.

Religious beliefs

Among the patients 76 (70%) were Christians, 27 (25%) were Muslims and 6 (5%) were traditional religion adherents.

Duration of lost vision before cataract surgery

This study revealed that 65 (60%) had lost vision in the index eye more than one year prior to presentation for surgery while 33 (30%) was for 6 months and in 11 (10%) it was only 3 months.

Reasons for delay in cataract surgery

Various reasons were given in this study for delay in cataract surgery which include; 44 (40.4%) claimed immaturity of cataract as responsible, 37 (33.9%) blamed delay in cost of surgery, 9 (8.3%) attributed it to delay in control of systemic diseases, 19 (17.4%) claimed other reasons such as lack of someone to accompany them to hospital, poor outcome of surgeries, distance from hospital and not knowing surgery can bring back vision as reasons for delay.

Visual outcome

Among those operated and followed up for 2 months post operatively, first day post-operative VA revealed that 30 (27.3%) had VA 6/6 – 6/18, 63 (57.7%) had VA <6/18 – 6/60 while 16 (15%) had VA <6/60.

At 2 months post-op period the presenting VA reveal 65 (59.6%) had VA 6/6 – 6/18, 35 (32.1%) with VA <6/18 – 6/60 and 9 (8.3%) had VA <6/60.

Best corrected VA at two months post operatively shows 78 (71.6%) had 6/6 – 6/18, 25 (22.9%) < 6/18 – 6/60 while 6 (5.5%) had BCVA <6/60.

Complications

Complications following the cataract surgery were; fibrinoid uveitis (3), endophthalmitis (1), posterior capsular rent with/without vitreous loss (6).

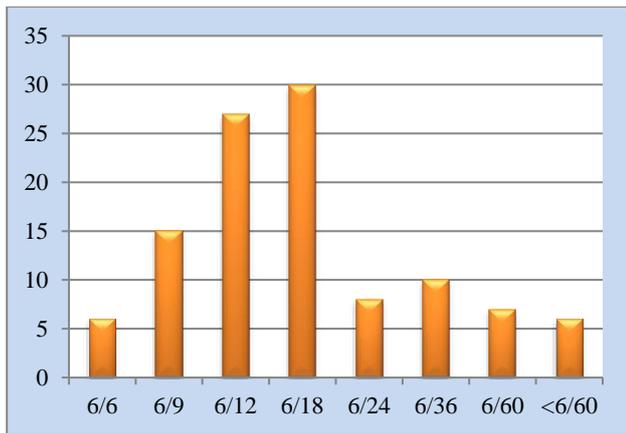


Figure 2: Best corrected visual acuity at 2 months post-op.

DISCUSSION

In this study population of 109 who had cataract surgery and follow-up for 2 months, men were 55 (50.5%) while women were 54 (49.5%). Similarity in the numbers of both sexes may be explained by the fact that the surgery took place between September and November which coincided with harvest period, so more men would have gone to the farms and therefore relatively unavailable for the surgery. The result is similar to that of Naveenkumar et al.⁹ However, another study in Surat area of India shows women to be more than men.¹⁰ The Surat study was however, done over a 5-year period (2005-2010) so many people had opportunities to attend. Rekhi et al in their studies found overwhelming male preponderance.¹¹ Many studies in Nigeria and Africa have documented male dominance among those presenting to eye hospitals even though women have more risk for cataract they do not have the benefit of cataract surgery like their male counterparts.¹¹⁻¹⁶

The age distribution showed that 99 (90.8%) of participants were in the age group of 61 – 80 years. This agrees with other studies in Nigeria.^{12,17,18} More so, advancing age is a risk for cataract development.

The educational status of participants revealed that 50 (45.9%) were illiterates with 59 (54.1%) literates. This finding is similar to other findings in studies in South Western Nigeria and India.^{9,20} Women had more proportion of illiterates 30 (60%) than men 20 (40%) which is similar to the study of Kumar et al.⁹ This is because women face barriers to education caused by poverty, cultural norms and practices, poor infrastructure and fragility.²¹

Among the study population, Christians were the majority with 76 (70%) of the total population with Muslims 27 (25%) while traditional religion adherents were 6 (5%). This result can be explained by the simple fact that majority of people in this area are Christians due to their

early contact with Sudan Interior Mission (SIM) organization who converted them to Christians.

Sixty people (55.1%) earned less than 250,000 naira (US\$625) annually with women constituting 81 (74.1%) of this population. Thirty (27.5%) of the population earned between 250,000-500,000 naira (US\$625 - \$1,350) annually. Only 19 (17.4%) earned more than 500,000 naira (\$1,350) annually. Among those who earned more than 500,000 naira (US\$1,350) annually, only 4 (7.4%) were women. He et al²² pointed out that lack of finances was responsible for inability to correct their eye condition which agrees with a finding in rural Nigeria and other parts of the world.^{3,23-26}

This study revealed that 65 (60%) of the population had noticed loss of vision for more than 1 year prior to having cataract surgery while only 10% (11) noticed lost vision within 6 months prior to surgery. Such delay may be associated with pre-, intra- and post-operative difficulties which has been shown to affect achieving a post-operative visual acuity of 6/12 or better by a factor of 4.6 in the elderly compared to younger age group.^{26,27}

Major reasons discovered in this study to be responsible for delay in presenting for cataract surgery included immaturity of cataract 44 (40.4%) cost 37 (33.9%), poor control of systemic diseases 9 (8.3%), others 19 (17.4%). This is contrary to findings in other studies. Vishaka et al found good vision in the other eye as the major reason for the delay.²⁵ Cost was found to be the second cause of delay in surgery in our study. Hence it will be apt for policy makers and health care planners to give due consideration to cost reduction in cataract surgery in Africa and the developing world.

The result of first day post-operative VA shows 27.3% (30) had a presenting VA of 6/6 – 6/18 which is better than 13% obtained by Olawoye et al in Ibadan and Adepoju et al in Ilorin at one-week post-op.^{19,12} We could not assess the pinhole VA on first day post-op because of logistics. Eight weeks post-op revealed 59.4% (63) had presenting VA of 6/6 – 6/18 which further improved to 71.6% (78).

The BVCA though less than the WHO standard of 90% is better than what was obtained in some studies but also fell short of what was found in other studies.^{12,17-19,27}

This study has several limitations. This study was done over a 3 months period which is too short to allow for more people to be recruited so that reasonable conclusions can be drawn. All surgeries were done in one place thereby denying others who could not come to the base hospital for one reason or the other. De-centralizing the surgery site would afford more people the opportunities to benefit from the surgery.

Intraocular lens power was given based on subjective need of the patient. Ocular A scan and Biometry would

have given a more appropriate intra ocular lens power with better visual outcome.

CONCLUSION

This study found a marginal preponderance of males presenting for cataract surgery with the age group 61-80 years being more. Literates availed themselves the opportunity for cataract surgery than illiterates while Christians were available for surgery than others at the site. Majority of those who presented for surgery earned less than 250,000 naira (US\$625) annually and more of those earning less than N250,000 naira (US\$625) were females with only 4 (7.4%) of those earning more than 500,000 naira (US\$1,350) being women. Most of them 65 (60%) presented after 1 year of lost vision in the index eye. The major reason for delayed presentation for surgery in this study was immaturity of cataract as against cost in many other studies.

Post-operative vision progressively improved from 1st day to 2 months post-op with best corrected VA good in 71.6% even though less than the WHO standard.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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