

Original Article

Gender Differences and Financing Patterns of Cataract Operated Adult Patients Attending a Tertiary Health Facility in Northern-western Nigeria

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ABSTRACT

Cataract is the leading cause of blindness worldwide Gender and financing are important issues that need to be addressed to achieve control of the condition that is reversible by surgery. The study assesses the demographic variables, gender patterns, and financing of cataract-operated adult patients evaluated for astigmatism at the National Eye Centre, Kaduna. This was a descriptive cross-sectional study involving 150 patients recruited as they presented to the NEC, Kaduna, with age-related operable cataracts from 3rd January 2011 to 20th November 2012 were included. The mean age of the respondents was 61.82 years \pm 10.68. The age group with the highest number of operable cataracts was 60-69 years (43.3%; n=65). Eighty-six (57.3%) of the subjects were males and 64 (42.3%) were females with a sex ratio of 1.34: 1. There was a marginal increase in the number of females from the age of 70 years. The majority of the clients (80%; n=120) paid directly, out-of-pocket and 30 (20%) paid by the NHIS or company retainer ship. Surgery was paid for by the relatives and spouses in 38 of 64 (25.4%) of the females and 12 (8.3%) of the men. A review of gender trends showed a sex ratio of 2:1 in the 1960s and early 70's to an approximately equal sex ratio at the time of this study. There was a consistent narrowing gap in the gender pattern of cataract surgical services uptake. The major means of accessing surgery was by Out-Of-Pocket payment and women depended more on relations to access these services. A sustainable policy for the provision of free or subsidized cataract surgery services is recommended.

Keywords: Cataract, Gender, Out-of-Pocket, Health Insurance

INTRODUCTION

Gender imbalance in utilization of health care services has received attention worldwide especially in eye care where 2/3rd of blindness are in women and most of whom are over the age of 50 years, and 90 % lived in poverty.¹ In spite of this, women utilize eye care services 40% less than men^{2,3}.

Studies have shown that the prevalence of cataract blindness is higher in women than men and that the female gender inadequately utilized cataract surgical

services.⁴ Cataract is the major cause of blindness and is predominantly caused by aging; therefore, the projection that the aged population was to double in the year 2015 means an increased in global cataract burden if concrete steps are not taken for the prevention and control of this disease⁵. As the most populous country in Africa, this projected rise in cataract is a source of concern in Nigeria, more so that the cataract surgical coverage is low in the country⁶. Since women have higher prevalence but utilize fewer services, it therefore suggests that the burden of

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projected rise and vicious cycle of poverty and social deprivation among rural poor of underdeveloped countries of the world will be on women.

Several barriers have been reported on the uptake of cataract surgical services in Nigeria,^{7,8} some of these reports have also highlighted the determinants of low cataract surgical services among the Nigeria women.^{9,10} The cultural beliefs associated with patriarchal nature of the Nigerian society where there are greater preferences for the male gender has placed the females at a disadvantage position in every facet of the society including utilization of the eye care services. This explains the reason for the declaration by the World Health Organization that the theme of the world sight day 2007 was on the issues of gender and uptake of eye care services¹¹

This study therefore describes the gender and financing pattern in a group of 150 patients that were recruited in a study of postoperative astigmatism in adult cataract operated patients at the National Eye Centre, Kaduna, Nigeria from 3rd January 2011 to 20th November 2012. The changing trends of cataracts in the country were also reviewed from available literature with a view to provide evidenced based information for enhancement of improved eye care in general and particularly the improved uptake of cataract surgical services in Nigeria.

MATERIALS AND METHODS

Background of the study area

The National Eye Centre (N E C,) is a WHO regional Hospital, the largest referral eye Hospital south of the Sahara located in Kaduna, capital of Kaduna state, Northwest Nigeria. It was established in 1979 with the aim to provide comprehensive ophthalmic services, training and research facilities for the development of ophthalmology in Nigeria and beyond. N E C offers specialized clinical services and training programs as Residency, Intraocular lens microsurgery, community eye health and Post basic ophthalmic nursing.

Study Design

This study was a descriptive cross sectional study involving 150 patients recruited as they presented to the National Eye Centre from 1st January 2011 to 20th

November 2012. This survey quantitatively aimed at determining the gender pattern in the uptake of cataract surgery by clients in this facility.

Sample size

Sample size was calculated using the formula

$$n = Z^2 pq / d^2$$

n = desired sample size

Z = (standard normal deviate) obtained from the normal distribution table = 1.96

P = prevalence of cataract blindness in a previous study in North Western Nigeria = 5.6% = 0.056¹²

q = complimentary probability to $P = (1-P) = 0.944$

d = Degree of accuracy (precision) desired here set at 0.05.

$$n = \frac{1.96^2 \times 0.51 \times 0.49}{0.05^2}$$

= 81.23

Adjustment for a 10% rate of non-responses and invalid responses = $n = 81.23 / 0.9 = 90.5$

The minimum sample size was 91 clients. This was however increased to 150 clients to increase the power of the study.¹³

Sampling technique and Data collection

All new patients report to the Primary Eye Care Clinic (PCC), this is usually manned by resident doctors who sort out patients to special clinics and also managed common endemic diseases. The author informed the doctors of this study and its significance in eye care delivery. Doctors in PCC (Primary Care Clinic) were then requested to refer all patients 40 years and above with cataracts to the author.

All consecutive patients with operable cataract were referred to the author by the resident doctors in the PCC. The author filled the biodata including age, sex, marital status, the laterality and source of funding were also recorded on a data sheet. In addition, other variables necessary for surgery and assessment of astigmatism were recorded. The data collected was analyzed using SPSS version 16 after manual cleaning and coding, Chi-square test was used to test for associations. A p-value of less than 0.05 was

considered statistically significant.

Ethical Considerations

The author explained the aim of the study and the procedures to the participants. Those who consented and met the inclusion criteria signed the informed consent form and were included in the study. The study was approved by the ethical review committee of the NEC

RESULTS

The age of patients ranged from 40-88 years with a mean of 61.82 years ±10.68. The age group with the highest number of operable cataract was 60-69 years (43.3%; n=65). Eighty-six(57.3%) were males and 64(42.3%) females with sex ratio 1.34: 1. There was a marginal increase in the number of females from the age of 70 years (Table 1, Figure 1).

Eighty-two patients (54.7%) had right eye operable cataracts while 68(45.3%) was in the left.

Type of payment for surgery

Out of the 150 patients, 120 (80%) paid direct out-of-pocket and 30 (20%) by NHIS or company retainer ship. Surgery was paid by relatives and spouse in 38 (25.4%) females and 12(8.1%) men.(Table 2).

Table 1: Age and Sex Distribution of the patients who accessed cataract surgery at the NEC, Kaduna.

Variables	Sex		Total (%)
	Male (%)	Female (%)	
Age			
40 - 49	9(6.0)	10(6.7)	19(12.6)
50-59	17(11.3)	8(5.3)	25(16.7)
60 – 69	43(28.7)	22(14.7)	65(43.4)
70-79	15(10.0)	20(13.3)	35(23.3)
80 – 89	2(1.3)	4(2.7)	6(4.0)
	86(57.3)	64(42.7)	150(100.0)

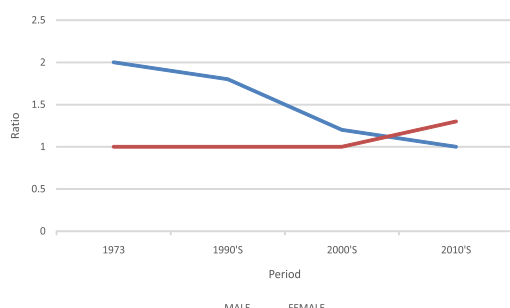


Figure 1. Changing trend in sex ratio in cataract operated patients in Nigeria

Key: 1973=Osuntokun;¹⁴1990's=Eruchalu¹⁵Kaduna, Osanhon¹⁶ Benin; 2000,s=Oladigbolo¹⁷ Zaria, Oruotu¹⁸PHC, Olawoye¹⁹Ibadan; 2010's=Kurawa²⁰ Kano and Oderinlo²¹Lagos

Table 2: Type of payment for cataract surgery segregated by sex of the clients.

Variables	Sex		Total (%)
	Male (%)	Female (%)	
Type of payment			
Self	52 (34.7)	18 (12.0)	70 (46.7)
Spouse	5 (3.3)	25 (16.7)	30 (20.0)
Relatives	7 (4.6)	13 (8.7)	20 (13.3)
Work	22 (14.7)	8 (5.3)	30 (20.0)
Total	86 (57.3)	64 (42.7)	150 (100)

DISCUSSION

Universal eye care coverage has cataract surgery as an important component and can be achieved through access to affordable surgery and addressing factors that can affect financing like gender issues-particularly in a resource-limited country like Nigeria, where the least advanced yet effective surgical interventions are offered. Cost is a major barrier to eye care service utilization in Nigeria, Africa, and other parts of Asia and has been reported to affect more women than men.^{4, 7-10, 22} Related to cost is the payment method that makes access to services possible. The modern trend of financial access to health care globally is by insurance which has been found to enhance service uptake. Insurance has the advantage of making services readily available and affordable when in need and helps remove the barrier of delay in seeking funds. The National Health Insurance Scheme (NHIS) was signed into law in Nigeria in 1999⁴⁷ yet we still see Nigerians accessing healthcare services by several means such as out-of-pocket (OOP), other forms of company payment, and through free health care programs, organized by donor agencies and individuals.

In the 150 operated patients in this study financial access was mainly by out-of-pocket payment 120(80%) and 30(20%) by insurance or company retainer ship payment. This is consistent with reports that private health care expenditure in Nigeria has consistently being highly out-of- pocket over the years; 90% in 2002 and 95.7% in 2012.²³ This type of payment can lead to catastrophic expenditures on health which can consequently serve as a major barrier to seeking orthodox healthcare services.²⁴ This study shows that health insurance in cataract surgery financing is unpopular in the study Centre. A community survey carried out in Jos, north central Nigeria showed that only 24% of adults were enrolled

in the NHIS.²⁵ The reason being that majority of health insurance enrollees in Nigeria are in the formal sector especially at federal government level.²⁶⁻²⁸ There is need to encourage state and local government employees towards enrolment and setting up of community health insurance targeted at the informal sector if health insurance to enhance universal eye care coverage.

We also observed during this study made up of males and 64(42.3%) females with sex ratio 1.34: 1, that the gender pattern in payment modality showed that, in out-of-pocket payment, 52(34.7%) men and 18(12.0%) women paid directly out of pocket from their earnings, while most women 38(25.4%) were paid for by their spouses or family relations. Again those whose surgery was paid for by their employers through retainer ship or NHIS were 22(14.7%) men and 8(5.3%) women. This suggests that the women in this study depend more on goodwill of family members to utilize cataract surgery than men. Caris EG et al in a Systematic review of barriers to surgical care in low-income and middle-income countries found that influence of other family members on decision-making constituted a barrier to uptake.²⁹ This is because socio cultural issues that do not place the household resources in the care of the woman leads to situations when husband or relatives do not see the worth spending on the health care need of the woman. When women are not financially empowered, they often lacks financial access to care even when they have operable cataract.^{7,8} This also explains why the barrier of cost affects more women in the utilization of cataract surgery services in Nigeria.^{7,9,10}

Some previous studies have reported higher prevalence of cataract surgery among women which may be attributed to longer female life expectancy knowing, that senility is a major factor in cataract causation.³⁰⁻³⁴ Contrary to these prevalence findings, our study showed a slightly higher male cataract surgeries although the proportion of female who had cataract surgeries was noted to be higher at the extreme of old age (>80 years) This corroborate earlier report from Olawoye et al in Nigeria and Zaman et al in Pakistan of males, sex ratio 1.2:1 and 51% males, respectively.^{19,35} There are, however, more women presented for cataract surgery in India

and Spain.^{31,36,37}

The earliest study by pioneer ophthalmic surgeon Osuntokun in 1973 reported sex ratio of 2:1; (male: female) among operated patients.¹⁴ The study was carried out in a more educated western Nigeria, suggesting it would have been worse in a nationally representative sample, where female access to education is low, such as the north.³⁸ In 4 decades, the 2010s after Osuntokun's report, studies showed a sustained improvement of gender gap in utilization of cataract services. This study and others found a marginal male preponderance, some reported a complete reversal of ratio (M: F, 1:1.3) such as that by Kurawa in Kano and Oderinlo (50.4%) females and 58(49.6%) males in Lagos.^{20,21}

Some direct activities in eye care such as outreach eye camps carried out free or at highly subsidized rate have contributed immensely to improve the women access to eye care services at the community levels.^{39,40} Such program carried out by Baruwa⁴⁰ et al in China reported a reverse gender differences after 5 years of access to free cataract testing and low-cost surgery. They also reported improved familiarity with cataract surgery and increased willingness to pay at least 500 RMB (US\$65) for cataract surgery by women.

Globally, senility is the most important factor in the formation of cataract and it's consistent that the mean age of the respondents in this study was 61.82 + 10.68 SD years with an increase in the number of cataract with age, however, from 70 years the number decreased. Other studies also reported similar trend.^{15,19,41} This may be due to low life expectancy in Nigeria where fewer people live beyond 70 years, or it may be that the elderly patients lack the social support to get to the hospital to access eye care services^{9,30,31}

CONCLUSION

Cataract is found in older age group, major means of accessing surgery is by OOP and women depend more on relations to access these services. There is consistent narrowing in gender pattern of cataract surgical services uptake. These efforts need to be sustained to completely change the old pattern of male preponderance and also give women access to

eye care services as much as their male counterparts.

Recommendation

There is therefore need for Government to take measures that will enhance the economic empowerment of women, as provided in the MDGs since this research found women depend more on family members to access care. Also to establish a social and welfare health program for the aged so as to increase women's access to cataract surgery.

Declaration

We declare no conflict of interest.

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