Nigerian Journal of Clinical Practice
Sept. 2010 Vol 13(3):280-283

APPROPRIATENESS OF OPHTHALMIC CASES PRESENTING TO A NIGERIAN TERTIARY HEALTH FACILITY: IMPLICATIONS FOR SERVICE DELIVERY IN A DEVELOPING COUNTRY

***AO Mahmoud, **SA Kuranga, *AA Ayanniyi, **AL Babata, *J Adido, *IA Uyanne**
*Departments of *Ophthalmology and **Surgery, University of Ilorin Teaching Hospital, Ilorin, Nigeria.*

ABSTRACT

Objective: To assess whether the ophthalmic cases presenting at a Nigerian tertiary eye unit are appropriate for such level of care and also draw necessary implications for service delivery.

Methods: Data on 1,321 consecutive new patients that presented at the ophthalmic clinic of the University of Teaching Hospital, Ilorin, Nigeria between February and July 2005 were reviewed on demographics, referral routes, and reasons for patronage, diagnoses and disease categories. Information on the general situation of health infrastructures prevailing at the surrounding health facilities was collected from key-informants.

Results: One thousand and ninety-one (82.6%) presented without any referral and 1,095 (82.9%) patronized in order to access perceived good quality of eye care service being rendered. However, only a small proportion of their ailments (191, 14.5%) actually required attention at the tertiary level of eye care. The key informants painted a picture of severely-challenged general and health infrastructures particularly at the primary health care facility level

Conclusion: An overwhelming majority of ophthalmic patients directly accessed eye care at the tertiary level, even though most of their ailments could have been satisfactorily treated at the lower facilities of health care were the latter to be functioning optimally. A better coordinated and strengthened health care system, particularly at the primary and secondary health care facilities would ease the burden of inappropriate presentations on tertiary health facilities in Nigeria.

Key Words: Health care utilization pattern, referral routes. *(Accepted 20 July 2009)*

INTRODUCTION

The Act of Parliament which established the premier Nigerian tertiary hospital at Ibadan in 1952 and which had served as the template for the subsequent establishment of the remaining tertiary hospitals spelt out their primary functions as teaching and research. The service function was to be rendered only to a minimal level to ensure the satisfactory performance of the two basic functions through a well-regulated process of referral of patients from lower-level health facilities. However in recent times, health service delivery has become synonymous with dysfunctional infrastructure, limited access to and use of existing eye care services in most of the poor countries of the world[1].

The University of Ilorin Teaching Hospital, Ilorin, Nigeria (UITH), which is home to the only tertiary ophthalmic department in Kwara State, Nigeria. The hospital is located in the capital city-Ilorin and regularly operates twenty different departmental Clinics manned by 120 specialists. The eye care team at UITH consists of seven ophthalmologists, two optometrists, 15 ophthalmic nurses, and 2 dispensing opticians. Kwara State with a population of about 3 million has a high burden of ocular morbidity and blindness, as evidenced by a blindness prevalence of 3.4%, the causes of which are largely from preventable or curable eye diseases[2]. An earlier retrospective study at UITH had noted that the ophthalmic clinic served equally as a primary and secondary eye care provider[3]. What has been lacking so far, in backing up this assertion, are concrete data on the magnitude and nature of the problem. We aim in this study to objectively assess whether the ophthalmic cases presenting at a Nigerian tertiary eye unit are appropriate for such level of care and also to draw implications for service delivery from the ensuing findings.

Correspondence: Dr A O Mahmoud
E-Mail:mahmoud_ao@yahoo.com

MATERIALS AND METHODS

This study was conducted between February and July 2005 at the outpatient clinic of the Department of Ophthalmology, University of Ilorin Teaching Hospital, Ilorin, Nigeria (UITH). Approval for the

study was obtained from the UITH Ethical Committee before the study was embarked upon.

All the 1,321 consecutive new patients who presented then were the subjects of this study. Each patient's history included specific questions relating to age, sex, income-earning category and distance of place of residence from UITH, route of referral, and reason for patronage. The income-earning categories were categorized as follows: low for household monthly earning less than ten thousand Naira, medium for earnings between ten and fifty thousand naira, and high for those earning more than fifty thousand naira (one United State's Dollar was then equivalent to about 120 Nigerian Naira).

Their visual categories using World Health Organization (WHO) guidelines[4], and diagnoses made by their attending ophthalmologists, after the conclusions of relevant examinations, were recorded. Using another WHO categorization of ocular morbidities into the appropriate level of health care hierarchy that the conditions ought to be recognized and treated for optimal resource utilization[5], each of the diagnoses was assigned to the indicated appropriate level of eye care that it ought to have been treated.

The details of the history, visual acuities and diagnoses were analyzed using the SSPS version 10 statistical software. The test of significance was carried out using the Chi square test, with the level of significance at $p<0.05$.

Information on the general situation of health care infrastructures at the ophthalmic units in the primary and secondary health care facilities within the catchment area of UITH service i.e. Kwara State of Nigeria, was collected through the means of questionnaires that were administered on eight key informants. Two key informants at the primary level of care were selected from each of the three administrative sub-divisions (Senatorial districts), while the remaining two were selected from the lone secondary tertiary health facility located at Ilorin. Specific enquires were made on the adequacy of available human and material resources, general infrastructures and logistic supports.

RESULTS

A total of 1,321 new patients were attended to during the period.

DEMOGRAPHICS: Patients' ages ranged from 2 months to 100 years with a mean of 33.1 years and a standard deviation of 21.8. There were 656 males and 665 females. Table 1 illustrates the age and sex distribution of these patients.

Majority of the patients (1,053 out of 1,321, 80.3%) were from the low-income earning category. Two hundred and fifteen (16.3%) were medium-income earners and 43 (3.3) were from high-incomecategory.

An analysis of the distances between the residences of these patients and the University of Ilorin Teaching Hospital, Ilorin (UITH), revealed that majority of the patients (1,055, 79.9%) were residing within Ilorin metropolis where the hospital is located. As for the others who came from outside the city, 44 (3.3%) were from within 25km radius of Ilorin city, 91 (6.9%) from within 50km radius while 115 (8.7%) were from more than 50km radius. The exact places of residence for the remaining 13 others (1%) could not be conclusively ascertained.

REFERRAL ROUTES: An overwhelming majority of the patients (1,123, 85.0%) presented solely on their own accord. Forty patients (3.0%) had been referred from private health care facilities and 42 others (3.2%) from government-owned health facilities. One hundred and sixteen patients (8.8%) were referred from across various sister departments within UITH (Fig. 1).

REASONS FOR PATRONAGE: The good quality of eye care service being rendered at UITH was cited by 1,095 patients (82.9%) as their reason for patronizing UITH. One hundred and twenty-four patients (9.4%) cited their referral from other health facilities as the reason, 27 patients cited failure of improvement with remedies earlier offered at other hospitals, and 23 patients (1.7%) said they came because of the fact that they did not know of any other eye facility to patronize.

VISUAL STATUS: Using the World Health Organization's definition, 570 patients (43.2%) had normal vision (better or equal 6/18 in the better eye), while 208 (15.8%) were blind (worse than 3/60 in the better eye). Two hundred and seventy-five others (20.8%) were visually impaired (worse than 6/18 but better than or equal 3/60 in the better eye), while the visual status of the remaining 268 (20.3%) could not be ascertained either because they were too young or were unable to cooperate with the visual acuity test then.

DISEASES CATEGORIES: The array of ophthalmic ailments that the patients presented with included vernal conjuctivitis (305, 23.1%), pterygium (62, 4.7%), ametropia (175, 13,2%), cataract (196, 14.8%), glaucoma (51, 3.7%), infective conjunctivitis (80, 6.1%) corneal ulcers (25, 1.9%), eye injuries (139, 10.5%), uveitis (42, 3.2%)) and a host of others (246, 18.6%).

When each of the cases was categorized into which of the three tiers of health hierarchy that it could have been optimally dealt with in strict accordance to the WHO detailed guidelines[5], 506 (38.3%) were adjudged to be appropriate for the primary level of care. Six hundred and twenty-four others (47.2%) could have been attended to satisfactorily at the secondary level of care, while the remaining few cases (191, 14.5%) were appropriate for the tertiary level of care.

Further analysis of several potentially-moderating variables on the over-whelming practice of self-referral by this group of patients revealed that neither the patients' age categories ($p=0.667$), nor gender ($p=0.412$), nor the income-earning categories ($p=0.096$) proved significant ($p<0.05$). The variables that proved significant ($p<0.05$) are the distance of patients' residence from UITH ($p=0.000$), visual status ($p=0.000$), disease category ($p=0.00$), and income-earning category ($p=006$).

INFORMATION FROM KEY INFORMANTS: Eight selected key informants participated in the study. Six of these, who were all ophthalmic nurses, practiced at the six selected primary facilities. In all the six primary facilities, there were neither medical officers, nor optometrists and they all had a near-total absence of municipal infrastructures (power, telephone and water supply), and medical (including ophthalmic) supplies such as drugs and basic surgical and diagnostic equipment. They also identified lack of proper training and re-training, and poor remuneration as being responsible for their inability to render optimal services to their patients.

The remaining two key informants-an ophthalmologist and an ophthalmic nurse, practiced at the lone secondary ophthalmic facility which is also located at Ilorin. The secondary facility was manned by two ophthalmologists, eight ophthalmic nurses, an optometrist, and two dispensing opticians. The two key informants reported a good compliment of general and medical infrastructures but they also wished for an enhanced supply of ophthalmic drops and consumables.

Table 1: Patients Age and Sex Distribution.

Age groups (years)	Sex		Total
	Male	Female	
15	178	144	322
15 - 29	189	175	364
30 - 44	120	135	255
45 - 59	96	119	215
60 - 74	55	70	125
75 - 89	15	21	36
90+	3	1	4
Total	**656**	**665**	**1321**

DISCUSSION

Data from studies on eye-care utilization patterns have been found useful in contributing to efforts to optimize eye care services within the specific context they were made. For example in the United States of America, Javitt and Chang revealed that the principal diagnoses among all ambulatory eye care visits ere cataracts (25.62%), disorders of refraction (16.8%), and glaucoma (16.3%)[6]. Another study in a rural county in Ireland concluded that many of the visits to ophthalmologists were for normal eye examination, particularly among children[7]. This finding informed the authors' recommendation for screening algorithms which would free the ophthalmologists to see more complicated problems. In a study conducted in Benin City, Nigeria, it was found that a significant proportion of educated Nigerians patronized inappropriate sources for eye care[8].

A striking finding from this study is the fact that more than four-fifths of the patients referred themselves and had no evidence of earlier consultations at any of the lower health care facilities within or outside Ilorin metropolis including the general out patient department

FIG. 1: PATIENTS REFERRAL ROUTES

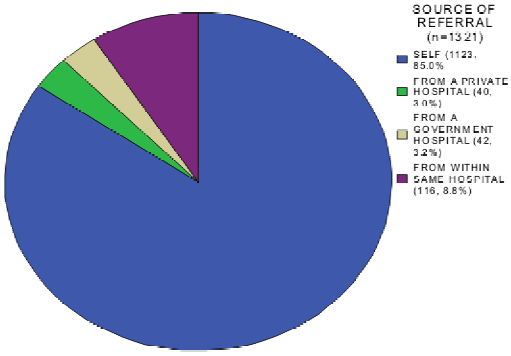
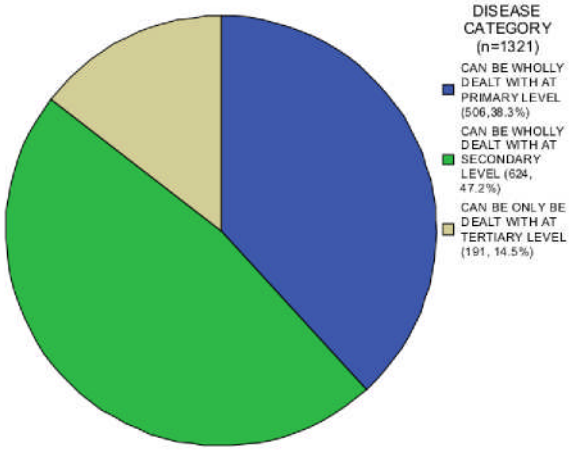


FIG. 2: CATEGORIES OF AILMENTS BY THE APPROPRIATE LEVEL OF HEALTH CARE FOR TREATMENT



of the host University of Ilorin Teaching Hospital (UITH).

This is far from the ideal in which any presentation at a tertiary facility ought to be by means of a referral letter. This finding contrasts sharply with a study in England on referral routes which revealed that all the subjects of the study had been referred by their general practitioners[9]. When these finding are now juxtaposed on to another finding that 79.9% of the patients cited their reasons for directly patronizing UITH as being the superior quality of eye care services being rendered there, it would appear that the resolve of patients to access eye-specialist care directly at the tertiary level, was deliberate in a bid to access quality service. It has been noted that even in the industrialized world, general practitioners (primary care doctors) generally do not have the skills or the equipment to render optimal basic eye care[9].

The abysmal picture of health infrastructures garnered from key informants especially at the primary health facilities within the catchment's areas of UITH (Kwara State) further lend credence to the reason why patients who might have the means to access tertiary eye facilities would shun the lower-level facilities. This is despite the fact that 85.5% of the ailments could have been satisfactorily treated at the lower level of health

care, if those facilities had had a good complement of personnel with the necessary skills, equipment and supplies.

The implication of the findings in this study is the urgent need to strengthen the Nigerian health care delivery system particularly at the primary care level. Inadequacy of funding, endemic corruption, and lack of clear-cut constitutional delineation of roles and responsibilities for the 3 tiers of Nigerian governments (Federal or National, State or Regional, and local governments) continue to be the main draw-backs to having an effective and harmonized health care system in Nigeria. The World Health Organization's World Health report 2003 had declared that strengthened health systems must be based on primary health care (inclusive of primary eye care)[10].

Even with a strengthened health system in place, the existing lack of coordination between the various stake-holders that own and operate the different tiers of health care delivery in Nigeria might still pose further challenges to the health care delivery system. For example, in Kwara State, where this study took place, there are almost enough ophthalmic personnel with requisite skills to render a satisfactory eye care based on the recommended model VISION 2020 district eye care programme[11] for the over 3 million inhabitants, if their activities were harmonized and coordinated. But the simple fact that the lone and better-funded tertiary health facility (UITH) is owned and operated by the Federal (National) government, the poorly maintained secondary facilities by the State (Regional) government, and the severely neglected primary care facilities by the Local governments; appears to have precluded any form of coordination and harmonization of their activities in the present scheme of inter-governmental relationship in Nigeria.

The implication of the findings from our study on the host tertiary hospital (UITH) is to find ways of coping with the "burden" of these inappropriate cases that patronize it, and to charge appropriate fees for service that would be commensurate with the perceived good quality of care. Certainly, it would be detrimental to the teaching and research activities of the ophthalmic clinics if the present situation of unfiltered access is allowed to continue.

The general out patient department, which ideally should be the screening point for any patient coming into contact with a teaching hospital should be strengthened to render primary eye care through the establishment of a well-equipped unit for screening ophthalmic patients and this unit should be manned by rotating senior-residents from the department of ophthalmology. Only those patients requiring further specialized ophthalmic care would then need to be subsequently referred to the ophthalmic clinic for the attention of ophthalmologists.

In conclusion, more than four-fifths of all the new patients that presented to the ophthalmic clinic were self referrals, and less than a fifth of all the presentations actually needed to have been attended to at the tertiary level of care. Most of them chose to attend the tertiary level facility because of perceived good quality of eye care being rendered there. A strengthened health care system in Nigeria particularly at the primary care level, a streamlining of the hazy constitutional guidelines on the control and funding of health care in Nigeria, and an increased coordination and harmonization of care at the various levels of the health care hierarchy, and innovative approaches by the management of teaching hospitals to handle the additional burden are suggested recommendations for reducing the burden of inappropriate presentations on Nigerian teaching hospitals.

REFERENCES

1. **Etya'ale D.** Beyond the clinic: approaches to outreach. Community Eye Health. 2006; 19: 19-21.
2. **Mahmoud AO, Olatunji FO, Buari SB, Sanni H.** Survey of ocular morbidities and blindness in Kwara State, Nigeria. Nigerian Journal of Surgical Sciences. 2005; 15: 26-31.
3. **Adepoju FG, Abdulraheem IS.** Clinico-epidemiologic pattern of eye diseases at the University of Ilorin Teaching Hospital. A one year review. The Tropical Journal of Health Sciences. 2005; 12: 40-43.
4. World Health Organization Prevention of blindness & Deafness. Consultation on development of standards for characterization of vision loss and visual functioning. World Health Organization. Geneva, 2003; WHO/PBL/03.91.
5. World Health Organization Prevention of blindness. Strategies for the prevention of blindness in National Health Programmes: A Primary Healthcare Approach. World Health Organization. Geneva, 2nd edition, 1997.
6. **Javitt JC, Chiang YP.** Preparing for managed competition utilization of ambulatory eye care visits to ophthalmologists. Arch Ophthalmol. 1993; 111:1034-5.
7. **Clendenin C, Coffey M, March M, West S.** Eye care utilisation patterns in a rural country in Ireland. Implications for service delivery. Br J Ophthalmol. 1997; 81:972 975.
8. **Dawodu OA, Okogie OH, Ukponmwan CU.** Pattern of utilisation of eye care services in Benin City, Nigeria. Nig Postgrad Med J. 2006; 13: 323 325.
9. **Sheldrick JH, Ng C, Austin DJ, Rosenthal AR.** An analysis of referral routes and diagnostic accuracy in cases of suspected glaucoma. Ophthal epidemiol. 1994; 1: 31 39.
10. World Health Organization. World Health Report 2003. World Health Organization. Geneva, 2003.
11. **Cook C, Qureshi B.** Vision 2020 at the district level (edition). Community Eye Health Journal. 2005; 18: 58 87.