



Practice Pattern of Non Ophthalmic Doctors on Ophthalmic Diseases

Authors

Obiajulu C Echedom¹, Nkiruka N.M Okoloagu¹, Ezekiel N EKweremadu¹,
Stella N Onwubiko², Suhanyah Okeke¹, Rich E Umeh², Ernest N Onwasigwe²

¹Department of Ophthalmology, College of Medicine, Enugu State University of Science and Technology
Enugu, Nigeria

²Department of Ophthalmology, University of Nigeria Teaching Hospital, Enugu, Nigeria

*Corresponding Author

Nkiruka N.M Okoloagu*

Department of Ophthalmology, College of Medicine, Enugu State University of Science and Technology
Enugu, Nigeria

Abstract

Introduction: *Non-Ophthalmic medical doctors are more often than not the first to be consulted by patients with visual symptoms in health facilities due to scarcity of ophthalmologists. Studies have shown that patients present quite late to the ophthalmologist, when their vision may have been markedly impaired. This study therefore aimed to assess the level of practice of the non-ophthalmic doctors on the prevalent eyes diseases causing avoidable blindness.*

Materials and Method: *A total of three-hundred-and-ninety-one, (391), non-ophthalmic medical doctors took part in the study. Owing to the fact that majority of the doctors work in the tertiary institutions while a few were located in the primary and secondary sectors, all the consenting doctors in the primary and secondary institutions were interviewed, whilst those from the tertiary centres were selected by a simple random process. The participants were examined through a pre-tested questionnaire on the definition, symptoms, causes and treatment of cataract, glaucoma, and refractive error. They were also assessed on their practice regarding ocular examination, referral of such cases when necessary as well as determining eye structures they assessed in cases of cataract, glaucoma, and refractive errors.*

Results: *The participants were 391: 313 males and 78 females. Twenty six of the respondents did not indicate their age. Majority of the participants (176; 45.0%) were aged 35.9±7.7 SD years and married (244; 62.4%). All the participants were Christians except one. The respondents had an overall mean score of 46.9% of their practice pattern. Place of work was the only statistically significant variable amongst others.*

Conclusion: *The respondents had poor practice pattern of prevalent blinding conditions like cataract, glaucoma and refractive errors. Exposure to ophthalmology during medical school training needs to be strengthened and encouraging practicing non-ophthalmic doctors to seek basic ophthalmic knowledge in the way of continuing medical education can help bridge the practice gap.*

Keywords: *Practices, Non-Ophthalmic, Doctors, Eye, Diseases.*

Introduction

There is an on-going debate on the adequacy of skill acquisition that occurs when medical students do their clinical rotation in ophthalmology departments. Given that these postings are short postings, structured as an appendage to traditional long postings in general surgery, it becomes difficult for the trainees to master any given clinical skill before the allotted period elapses. This has been compounded by the fact that new medical subspecialties are emerging which has further reduced the duration of time spent in eye clinics. Some studies have alluded to this trend to be responsible for a decline in practice patterns among general medical practitioners.^{1,2}

General practitioners play important roles in eye care delivery because they are usually the first point of contact for ophthalmic patients. The manner these patients are processed by them could determine the eventual visual outcome for the patient. Unfortunately, research has shown that they are ill-equipped skill-wise to take on this challenge. In a study in south London, 68% of the General Practitioners (GPs) admitted to having “uncertainties about eyes” while 10% affirmed the statement “eyes scare me stiff.”³ GPs also performed poorly in other studies which determined diagnostic accuracy of referrals to ophthalmic clinics, ability to detect asymptomatic eye disease, attitude and practices.⁴⁻⁸ Details provided by a simple ophthalmic examination are helpful to ophthalmologists when allocating clinic appointments appropriate to degree of urgency. Unfortunately such details are often lacking in referral letters.⁹

Cataract is the leading cause of blindness worldwide, accounting for half of the world's blind population.¹⁰ Cataract blindness poses one of the greatest public health challenges of the twenty first century.¹¹ According to the WHO, an estimated 20 million people worldwide are blind from bilateral cataracts.^{12,13} It is estimated that over 90% of the world's visually impaired live in developing countries.¹³ In these countries,

blindness is associated with considerable disability and excess mortality, resulting in large economic and social consequences.¹³

Glaucoma is one of the leading causes of blindness after cataract, and is a major cause of irreversible blindness.¹⁴ Glaucoma management represents one of the most important public health problems facing eye care delivery world-wide and is responsible for the third commonest reason to visit an ophthalmologist in the USA.¹⁵ Approximately 68 million people worldwide have glaucoma in some form, with 6.7 million bilaterally blind from the disease.¹⁵ Almost 2.5 million people in the US alone are afflicted with open angle glaucoma with about half being unaware they have the disease.¹⁵

According to the Nigeria National Blindness and Visual Impairment Survey 2005-2007, cataract was the commonest cause of severe visual impairment and blindness being responsible for 45.3% and 43.0% respectively. Glaucoma was the second commonest cause of blindness, 16.7%. The prevalence of blindness in the South East geo-political zone was 4.63% ranking third among the six geopolitical zones.¹⁶

Uncorrected refractive errors are a major cause of blindness and low vision, about 8 million people are blind, 145 million have low vision because of lack of adequate refractive correction globally.^{16,17}

Approximately three quarters of Americans over the age of 40 have refractive errors greater than 0.50D.^{18,19} About 150 million Americans currently use some form of eyewear to correct refractive errors, and of this number 36 million use contact lenses.²⁰ It is estimated that over 2.3 million patients in the US underwent refractive surgery from 1995 to 2000.²⁰ Uncorrected refractive error is the commonest cause of mild and moderate visual impairment, 77.9% and 57.1% respectively in Nigeria.

It has therefore become crucial to investigate the preparedness of non-ophthalmic medical doctors to tackle these challenges, especially their ability to identify the pathologies, treat minor ones and make urgent referrals to the ophthalmologists.

This study therefore sought to assess the practice patterns of the non-ophthalmic doctors on the prevalent eye diseases causing avoidable blindness such as cataract, glaucoma and refractive errors.

Aim

To evaluate the practice patterns of non-ophthalmic medical doctors on prevalent, blinding ophthalmic diseases in Enugu with a view to generating data for eye health policy.

Materials and Methods

Study Design

This was a descriptive, cross-sectional study done between September and December, 2011.

Study Area

This study was done in Enugu metropolis and the surrounding areas. Enugu metropolis is made up of three local government areas, namely Enugu North, Enugu South and Enugu East. The environs include the adjoining three local government areas, which are Nkanu West, Nkanu East and Udi. These six local government areas constitute the study area.

Sample Population

Non-ophthalmic medical doctors working in the primary, secondary and tertiary health centers in the six local government areas.

Inclusion Criteria

All non- ophthalmic doctors working in the six local government areas who were willing to participate in the study.

Exclusion Criteria

Ophthalmic doctors (consultants, residents and medical officers working in ophthalmology departments) in the six local government areas.

Ethical Consideration

Ethical clearance was obtained from the Health Research Ethics Committee of the University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu. The study was done according to the regulations regarding confidentiality of human subjects with respect to the 1994 Helsinki declaration. Informed

written consent was obtained from the respondents.

Questionnaire

The questionnaire (appendix i) was semi structured, and contained both closed and open ended questions. It has two sections namely, socio-demography and practice of prevalent eye diseases. Areas covered include definition, symptoms, etiology, and treatment of three prevalent eye diseases namely cataract, glaucoma, and refractive error. Regarding the practice patterns of the respondents, questions pertaining to ocular structures they examined in patients with cataract, glaucoma, and refractive errors were determined. The respondents were asked if they carried out posterior segment examination by fundoscopy on their patients.

The scoring system was as follows: 0% to 49% poor practice; 50% or above good practice. Years of practice post- graduation, sex, age and place of work were assessed for any significant associations.

Sample Size and Sampling

The calculated minimal sample size of 391 was based on 50% prevalence in the absence of an extant prevalence value for a population greater than 10,000. Being a finite population, a correction factor of 20% was also included. Simple random sampling was used to select the participants in tertiary institution while all the doctors in primary and secondary health centres were all enrolled in the study because of mal-distribution of doctors in Enugu state.²¹

Study Procedure

Six registrars from the Ophthalmology Department, University of Nigeria Teaching Hospital Ituku/Ozalla were recruited and trained as research assistants for a day. They took part in the administration of the questionnaire. The questionnaire was pretested on medical doctors in Umuleri general hospital in Anambra state and amended for clarity of content. The pretest results were excluded from the final data. The interviewers were divided in groups of two; they

contacted, visited, interviewed, obtained written informed consent and administered the questionnaire to the respondents.

Data Collection and Analysis

Data entry and cleaning were done. The data were then analyzed with Statistical Package for Social Sciences (SPSS) version 16.0. Chi-square(χ^2) was used for class comparisons while student T-test was used to compare means. A $P < 0.05$ was considered statistically significant.

Results

A total of 391 non-ophthalmic doctors took part in the survey. With varying degree of response in the parameters. Only 365 participants duly filled their ages. Of all the respondents, 176 (45.0%) were aged between 31 and 40 years with a mean age of 35.9 ± 7.7 years. Majority of the doctors 244 (62.4%) were married, and all the doctors were Christians except one who was a Muslim. Majority of the respondents were males (89.1%).

Table 1: Age and sex distribution of respondents. N = 365

Variables	Frequency (f)	Percentage (%)
Age group (years):		
20 – 30	93	23.8
31 – 40	176	45.0
41 – 50	71	18.2
≥ 50	25	6.4
Sex:		
Male	313	80.1
Female	78	19.9

*26 of the respondents who took part in the study did not indicate their ages

Table 2 Distribution of year of graduation and place of work of respondents. N = 391

Variables	Frequency(f)	Percentage (%)
Number of years post graduation		
1 – 10	268	68.5
> 10	123	31.5
Place of work		
Primary centre	21	5.4
Secondary centre	22	5.6
Tertiary centre	348	89.0

From the above table, most of the doctors have had up to 10 years of practice after graduation,

while a fewer number have practiced for over 10 years and the distribution of their places of work.

Table 3: Correct Practice towards the Eye Diseases. N=391

Correct practice	Respondents (f)	Percentage score (%)
Would do funduscopy on some patients with eye complaints	354	90.5
Ocular structures examined on patients with cataract:		
Lens	319	81.6
Pupil	128	32.7
Ocular structures examined on patients with glaucoma:		
Optic disc	241	61.6
Optic cup	162	41.4
Pupil	81	20.7
Ocular structures examined on patients with refractive error:		
Cornea	156	39.9
Lens	26	6.6
Mean percentage score		46.9

Table 3 shows that the respondents demonstrated poor practice pattern to eye diseases as shown by the mean percentage score.

Table 4 Practice pattern of the respondents according to age, sex, post-graduation years and place of work, N= 391

	Good practice (%)	Poor practice (%)	X (P value)	Odd Ratio (OR)
Age				
< 40 years	122(39.1)	190(60.9)	2.99(0.8)	1.57
≥40 years	40(50.6)	39(49.4)		
Sex				
Male	125(39.9)	188(60.1)	1.15(0.28)	1.35
Female	37(47.4)	41(52.6)		
Years post –graduation				
1-10 years	112(41.8)	156(58.2)	0.01(0.91)	0.95
>10 years	50(40.7)	73(59.3)		
Place of work				
Primary/Secondary	12(27.9)	31(72.1)	3.04(0.08)	1.95
Tertiary	150(43.1)	198(56.9)		

X= (Yates correction)

Table 4 shows that respondents 40yrs and above, females, those more than 10 years post-graduation and those in the tertiary centres had better practice pattern than their colleagues. This difference is not significant statistically.

Discussion

The aim of this study was to assess the practice pattern of non-ophthalmic medical doctors in the South East of Nigeria on common prevalent blinding eye conditions. The mean age of the participants was 35.9 years which is less than the Italian study (44.7years).²² The respondents in the 31-40 years age group had the highest frequency of 176 (45%) which is similar with the study done by Mahmoud.²³ A possible explanation could be that this age group is very active among the work force of a society. The male preponderance in this study was 4:1, while a study by Akinsola et al²⁴ was 3:1 ratio. Male preponderance seen in this study can be attributed to more male doctors in Enugu which is a function of sex- differential enrolments into medical schools in the study area. The study also revealed that majority (68.5%) of the respondents had only 1 to 10 years post graduation experience as well as employed in tertiary hospitals. This is likely as a result of residency training offered by these tertiary hospitals that attracts young doctors.

This study demonstrated that the respondents had a poor practice pattern (Table 4) with a mean score of 46.9%. A possible explanation might be that undergraduates lack adequate exposure in ophthalmology, a finding that has been documented by some studies.²⁵⁻²⁹ The issue of lack of interest in continuing medical education and its non-enforcement in the study area cannot be excluded. The respondents in the Brisbane²⁸ and Omani²⁹ studies were not conversant with ophthalmoscope and performed poorly in funduscopy. Further, it is also important to note that, the general practitioners are often faced with a greater challenge of managing patients with chronic co-morbid conditions. Consequently due to heavy work load schedule, they might not be patient enough to carry out simple eye checks. To circumvent these problems, an effective collaborative approach needs to be established between the ophthalmologist and general practitioners/non ophthalmic medical doctors.

Limitations

Most of the questions were close-ended, as such in-depth information could not be acquired from the respondents. Respondents might call up answers to questions with their internet-enabled device since the questionnaire was not structured like an interview. This can enhance the score of a participant and influence the study variables. A

selection bias might not be entirely excluded as the sample studied might not be representative of the overall population due to imprecise sampling techniques.

Conclusion

Non ophthalmic doctors in Enugu, South-East Nigeria have poor practice patterns toward potentially blinding ocular diseases. There is need for modification of the present medical curriculum both at undergraduate and postgraduate levels to bridge the gap in practice among non-ophthalmic doctors.

Recommendations

- 1) Review of medical school curriculum to improve the clinical practice of doctors on prevalent eye diseases, along the lines of longer exposures and postings in ophthalmology and emphasis on clinical skill acquisition.
- 2) Retraining of doctors on potentially blinding eye disorders and ocular examination skills as part of the continuing medical education programme.

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Appendix i

Questionnaire on Practice Patterns of Non-Ophthalmic Medical Doctors about Common Ocular Diseases in Enugu and Environs

Section 1:

Socio-Demographic Information

First, I would like to ask you some questions about yourself and your household. Instruction: circle appropriate codes

1. Tick sex of respondent as observed.

- a) Male b) Female

2. How old are you

- a) Age in years

3. What year did you graduate?

- a) Less than five yrs b) Five to ten yrs

- c) Eleven to twenty years

- d) More than twenty years

4. Are you in general practice?

- a) Yes No

5. Are you a specialist/consultant? a) Yes b) No

6. If yes to 5 above, which is your area of specialisation?

.....
7. Are you in the residency program/post graduate program?

- a) Yes No

8. If yes to 7 above, which is your area of specialisation?
.....

9. Place of work a) Primary Health Centre

- b) General Hospital c) Tertiary hospital d) Private hospital

10. What is your marital status now?

- a) Single b) Married c) Widowed

- d) Divorced

- e) Separated f) other (specify)

11. What is your religion? a) Christian b) Muslim

- c) African traditional religion d) No religion e) Others

Practice Pattern of Common Ocular Diseases

Tick/circle the alphabet signifying the appropriate answer, more than one answer may be correct

Cataract

(1) Cataract is a) whitish pupillary reflex

- b) Opacity of the cornea
c) Opacity of the pupil
d) Opacity of the crystalline lens
e) Others specify.....

(2) Symptoms of cataract include

- a) Pain
b) Dimness of vision
c) Painless progressive dimness of vision

- d) Painful progressive cloudiness of vision
- e) Others specify.....

(3) Causes of cataract include

- a) Senility
- b) Trauma
- c) Diabetes mellitus
- d) Congenital
- e) Genetic
- f) Other.....

(4) Treatment of cataract include

- a) Surgical
- b) Medical
- c) Medical/surgical
- d) Couching
- e) Other.....

Glaucoma

(5) Glaucoma is primarily a disease of

- a) Iris
- b) Cornea
- c) Optic nerve
- d) Lens

(6) Symptoms of glaucoma include

- a) Pain
- b) Painless progressive dimness of vision
- c) Painful progressive dimness of vision
- d) Bumping into objects by the side
- e) Other

(7) Causes of glaucoma include

- a) Familial
- b) Genetic
- c) Trauma
- d) Senility
- e) Other

(8) Treatment of glaucoma include

- a) Medical only
- b) Surgical only
- c) Medical/surgical
- d) Laser

Refractive Error

(9) Refractive error results from inability of the optical system to register a clear image on the

- a) Cornea
- b) Aqueous humour
- c) Pupil

- d) Lens
 - e) Retina
- (10) Some of the symptoms of refractive error include
- a) Blurring of vision
 - b) Dimness of vision
 - c) Tearing
 - d) Double vision
- (11) Types of refractive error include
- a) Myopia
 - b) Hypermetropia
 - c) Astigmatism
 - d) Other
- (12) Treatment of refractive error include
- a) Spectacle correction
 - b) Temporary spectacle correction
 - c) Surgery
 - d) Contact lenses e) Others
- (13) Would you do funduscopy on patients with eye complaints?
- a) Yes
 - b) No
- (14) In a patient with cataract, what ocular structures do you examine?
- a) Cornea
 - b) Lens
 - c) Pupil
 - d) Retina
 - e) All the above
- (15) In a patient with glaucoma, what ocular structures would you examine?
- a) cornea
 - b) Anterior chamber angle
 - c) Optic disc
 - d) Retinal vessels
 - e) All the above
- (16) In a patient with refractive error what eye structures would you examine?
- a) Cornea
 - b) Lens
 - c) Macular
 - d) Other