RELATIONSHIP BETWEEN OCCUPATION, GENDER AND DISTRIBUTION OF OCULAR PROBLEMS IN NIGER DELTA, NIGERIA

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ABSTRACT

Aim

To determine the relationship between occupation, gender and distribution of ocular problems in a rural setting of Niger Delta, Nigeria.

Methods

A multistage population based random sampling study of adults in five clans of Etche Local Government Area of Rivers State. Medical history was taken and comprehensive ocular examination done on each subject. Ocular examination included visual acuity, visual field, tonometry and ophthalmoscopy. Data taken were recorded and analysed using statistical software called Minitab 11. Ethical approval was obtained from relevant authorities.

Results

Of the 600 subjects seen in this study majority were farmers; 276 (46.0%), others were civil servants 152 (25.3%), and traders 102 (17.0%), few students 46 (7.6%), Retirees 15 (2.5%) and unemployed 9 (1.5%). 276 (46.0%) were males and 324 (54.0%) females. Twenty six (2.4%) subjects had good vision while 8 (0.8%) were blind. The top five ophthalmic problems identified were Presbyopia 298 (28.0%), Refractive error 247 (23.2%), Cataract 126 (11.8%), Allergic conjunctivitis 106 (9.9%) and Glaucoma 94 (8.8%),

Conclusion

Farmers were the most affected group and females the most affected gender. This may be attributed to the fact that these communities are mainly agrarian with high participation of women. Presbyopia and refractive errors were the most common ocular problem probably because majority of the people included in the study were above 40 years of age.

Keywords: *Ocular Problems, Occupation, Gender, Relationship, Niger Delta.*

INTRODUCTION

Ophthalmic problems are global and constitute serious public health challenges especially among older adults[1]. According to Bethesda, the prevalence of blindness and visual impairment increases with age among all racial and ethnic groups, especially among people older than 75 years of age[2].

The World Health Organization estimated number of people with visual impairment worldwide is 285 million, while 39 million are blind and 246 have low vision[3]. About 81% of all people who are blind or have moderate to severe visual impairment are aged 50 years and above, indicating that with an increasing population of older people, more people will be at risk of visual impairment due to chronic

eye diseases[4]. About 90% of the world's visually impaired live in low income settings and 80% of all visual impairment can be prevented or cured and over 90% of the world blind are in Sub Saharan African and Asia and especially among the persons in the rural communities[5]. Lawallen and Courtright reported the major causes of blindness in Africa as cataract, trachoma and glaucoma[6] Blindness prevalence rates vary globally but evidence based study suggests that approximately 1% of Africans are blind and majority of the blindness in that region are preventable or curable[6].

The Nigeria National blindness and visual impairment survey that was carried out in the year 2009[7] showed that the major causes of blindness and visual impairment among adults in Nigeria were uncorrected refractive error, cataract and glaucoma. The survey also stated that increasing age was associated with increasing prevalence of all blinding conditions. According to the survey, 4.25 million adults aged 40 years and above have moderate to severe visual impairment or blindness. The prevalence of blindness in Nigeria is 0.78% attributed that to poor technology, minimal eye care services, malnutrition and poverty[7,8].

The commonest causes of blindness worldwide are cataract, glaucoma, trachoma, onchocerciasis and refractive errors[9]. Most of these blinding diseases are preventable and easily treatable but the majority of the victims in Africa and Asia are either poor, ignorant, or do not have eye -care services available to them[10].

Etche is agrarian and the indigenes are predominantly farmers and according to Momoh and Abadom, farmers are usually exposed to certain occupational hazards that predispose them to ocular diseases and injuries[11]. Visual impairment obviously compromises people's quality of life because it makes them unable to read, watch television, drive a car, operate machines or attend to themselves. Most times, it isolates older people from friends and family which may lead to depression.

Ejimadu and Pedro-Egbe[12] in their study on prevalence and causes of Blindness in Ikwerre Local Government Area of Rivers State revealed that the three top causes of blindness in that community were cataract, Glaucoma, Optic Atrophy. Others were corneal Opacity, Phthisis Bulbi, Absent Globe, Chorioretinitis and Maculopathy. They further concluded that most of these blinding eye diseases are avoidable; therefore more emphasis on eye care should focus on prevention through public enlightenment and regular eye screening with participation of the government. Also the prohibition of harmful traditional practices, discouragement of self-medication, provision of basic eye care delivery and increasing cataract surgery will reduce prevalence of blindness.

This study therefore seeks to determine the relationship between occupation, gender and distribution of ocular problems.

METHODOLOGY

A multistage, population based, random sampling study, of adults in five clans of Etche Local Government Area of Rivers State was undertaken.

Medical history was recorded and comprehensive ocular examination done on each of the 600 subjects (276 males and 324 females) who were at least 21 years of age. This was carried out at the community health centre, after obtaining consent from them. Ocular examination included visual acuity, visual field analysis, tonometry and ophthalmoscopy.

Instruments used during the research were Pen torch for examination of the external structures of the eyes, Keeler ophthalmoscopes for fundus examination, Snellen's charts both literate and illiterate charts for visual acuity assessment, Reichert AT 555 Auto non-contact tonometer for

measurement of the intra-ocular pressure and trial lens cases used for subjective refraction. Subjects requiring visual field analysis were referred to the tertiary hospital in the state.

Data obtained were analysed using statistical software called Minitab 11where the raw data obtained were classified into different groups and categories based on their common characteristics. The data were logically represented, where raw data were summarized and displayed in a compact form that is statistical tables.

An ethical approval to carry out the study was obtained from Rivers State Ministry of Health through the office of Planning, Research and Statistics. Afterwards a second approval was obtained from Rivers State Ethical Committee following due applications.

Inclusion criteria were adults in Etche local Government Area who were 21 years and above and was randomly selected at the sampling stage. It also involved those that signed the consent forms and were ready to participate.

RESULTS

Of the 600 subjects (46.0% males and 54.0% females) seen in this study majority were farmers; 276 (46.0%). The others were civil servants 152 (25.3%), and traders 102 (17.0%), few students 46 (7.6%), Retirees 15 (2.5%) and unemployed 9 (1.5%). 276 (46.0%) were males and 324 (54.0%) females. Twenty six (2.4%) subjects had good vision while 8 (0.8%) were blind. The top five ophthalmic problems identified were Presbyopia 298 (28.0%), Refractive error 247 (23.2%), Cataract 126 (11.8%), Allergic conjunctivitis 106 (9.9%) and Glaucoma 94 (8.8%). The others were Pterygium 86 (8.1%), Bacterial Conjunctivitis 35 (3.3%), Corneal Opacity 3 (3.0), Chalazion 4 (0.4%), Diabetic Retinopathy 3 (0.3%) and Ptosis 1 (0.1%).

Table 1: DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

AGE (YEARS)	MALE (%)	FEMALE (%)	FREQUENCY (%)
21-30	57 (9.5)	60 (10.0)	117 (19.5)
31-40	79 (13.1)	82 (13.6)	161 (26.8)
41-50	72 (12.0)	102 (17.0)	174 (29.0)
51-60	46 (7.6)	64 (10.6)	110 (18.3)
>60	22 (3.6)	16 (2.6)	38 (6.3)
TOTAL	276 (46.0)	324 (54.0)	600 (100)
OCCUPATION			
Civil Servants	81 (13.5)	71 (11.8)	152 (25.3)
Traders	52 (8.6)	50 (8.3)	102 (17.0)
Farmers	115 (19.1)	161(26.8)	276 (46.0)
Students	17 (2.8)	29(4.8)	46 (7.6)
Retirees	9 (1.5)	6(1.0)	15 (2.5)
Unemployed	2 (0.3)	7(1.1)	9 (1.5)
TOTAL	276 (46.0)	324(54.0)	600(100)

Table 1 shows the demographical characteristics of the respondents. Out of the 600 subjects seen in this study 276 (46.0%) were males and 324 (54.0%) were females. Their ages ranged from 21 years and above. The highest age group was 41-50 with 174 (29.0%) subjects, followed by age group of 31-40 years 161 (26.8%) while the lowest age group was >60years with frequency of 38 (6.3%).
The second segment of the table shows the occupational distribution of the subjects. Majority were farmers; 276 (46.0%) while others were civil servants 152 (25.3%), and traders 102 (17.0%), few students 46 (7.6%), Retirees 15 (2.5%) and unemployed 9 (1.5%).

Table 2: DISTRIBUTION OF COMMON OPTHALMIC PROBLEMS WITH RESPECT TO OCCUPATION.

OCCUPATION	OCULO -VISUAL CONDITIONS (NO (%))				
	CATARACT	REFRACTIVE ERROR	PRESBYOPIA	ALLERGIC CONJUNCTIVITIS	PTERYGIUM
CIVIL SERVANT	19 (15.1%)	128(51.8%)	146(49.0%)	15(14.2%)	10(11.6%)
TRADERS	45 (35.7%)	22(8.9%)	50(16.8%)	18(17.0%)	16(18.6%)
FARMERS	52 (41.3%)	57 (23.1%)	69(23.2%)	55(51.9%)	53(61.6%)
STUDENTS	0 (0%)	31(12.6%)	10(3.3%)	12(11.3%)	3(3.5%)
RETIREES	8 (6.3%)	6(2.4%)	15(5.0%)	3(2.8%)	3(3.5%)
UNEMPLOYED	2 (1.6%)	3(1.2%)	8(2.7%)	3(2.8%)	1(1.2%)
TOTAL	126(100%)	247 (100%)	298(100%)	106(100%)	86(100%)

Table 2 shows the distribution of common ophthalmic problems with respect to occupation. Farmer presented more with cataract (41.3%) and pterygium (53%) than other occupations. Civil Servants had more refractive errors (51.8%) than other groups. The highest prevalence of presbyopia occurred amongst Civil Servants (49.0%).

Table 3: GENDER –RELATED OHTHALMIC CONDITIONS IN SUBJECTS

Ocular conditions	Gender		No (%) Prevalence
	Male	Female	Total
Presbyopia	158 (14.8%)	140 (13.1%)	298 (28.0%)
Refractive error	127 (11.9%)	120 (11.3%)	247 (23.1%)
Cataract	62 (5.8%)	64 (6.0%)	126 (11.8%)
Allerg. Conjunctivitis	30 (2.8%)	76 (7.1%)	106 (9.9%)
Glaucoma	46 (4.3%)	48 (4.5%)	94 (8.8%)
Pterygium	42 (3.9%)	44 (4.1%)	86 (8.0%)
Bact. Conjunctivitis	17 (1.6 %)	18 (1.7%)	35 (3.3%)
Corneal Opacity	21 (2.0%)	11 (1.0%)	32 (3.0%)
Good Vision	14 (1.3%)	12 (1.1 %)	26 (2.4%)
Blindness	5 (0.5%)	3 (0.3%)	8 (0.8%)
Chalazion	3 (0.3%)	1 (0.1%)	4 (0.4 %)
DM Retinopathy	3 (0.3%)	0 (0%)	3 (0.3%)
Ptosis	0 (0%)	1 (0.1%)	1 (0.1%)
Total	**528 (49.5%)**	**538 (50.5%)**	**1066 (100%)**

Table 3 shows gender related ocular conditions seen in the subjects. Females presented more with allergic conjunctivitis (7.1%), pterygium (4.1%) and cataract (6.0%) than males. While the males presented more with refractive error (11.9%) and presbyopia (14.8%) than females.

DISCUSSION

This study revealed significant relationship between the subjects' occupations and their common oculo-visual problems. The majority of the subjects were mainly farmers 276 (46.0%), civil servants 152(25.3%) and traders 102 (17.0%). Civil Servants 128 (51.8%) and Students 31(12.6%) had the highest prevalence on Refractive error/Presbyopia respectively. This may be attributed to their visual task being higher than those in other occupations. This was similar to a study by Njepuome,

Onyebuchi, and Igbe[13] that showed the pattern of oculo-visual problems among public / civil servants in Abuja as follows: refractive error 88.7%, Cataract 1.1%, Pterygium 2.3%, Disc cupping 3.4%, Chalazion 1.1% and Conjunctivitis 3.4%, where the ages of the subjects ranged from 25 years to 60 years. The study showed refractive error as a leading cause of visual impairment among civil servants in Abuja. Farmers were found to have the highest prevalence of Allergic Conjunctivitis (51.9%) and Pterygium (61.6%). This may also be attributed to the nature of their occupation that was basically outdoor activities that expose them to dust and ultra violet rays.

More so, the common ocular diseases prevalent among adults in our study were dependent on gender. The adult females had the highest prevalence on Cataract 64 (50.8%), Allergic Conjunctivitis 76 (71.7%) and pterygium 44 (51.2%) while Refractive Error 127 (51.4%) /Presbyopia 158 (53.0%) were more prevalent in males. This may be associated with the fact that majority of their females were more exposed to farm related activities while the males mostly did official works hence, had higher near visual tasks. This was in contrast to similar studies in the same environment and in southern Nigeria where there were a higher proportion of males to females and the male had a higher prevalence of Pterygium and allergic conjunctivitis in the study by Edema and Okojie[14].

But this finding was similar to a study by Nwosu[15] on rural young adults in Anambra state whose predominant occupation was farming, in which there were more females than males in the study and they had higher prevalence of allergic conjunctivitis than males. Nwosu postulated that it was probably due to the rural- urban drift of more males than females. It was also similar to a study by Wokoma[10] in a rural community in Rivers State where the proportion of female participants was higher than that of male and they also presented with higher rate of allergic conjunctivitis..

The distribution of blindness in this study showed that six subjects (75.0%) had mono-ocular blindness while two subjects (25.0%) were bilaterally blind. The three causes of blindness in the subjects were Glaucoma (25%), Cataract (50%) and Corneal Opacity / Trauma (25%). The incidence of blindness (0.8%) may suggest poor or no availability of eye care services in the locality.

The absence of any form of eye care service in this community, no doubts contributed to the relatively high prevalence of visual impairment. Eye diseases that would have been detected earlier and intervention given, continued to persist, deteriorate and eventually progressing to blindness. None of the General hospitals in our study area had any form of eye service. The available state owned hospitals that had eye sections were at Port Harcourt, Okrika, Ahoada and Bori. Unfortunately, the distance from our study area to these facilities, the logistics and costs involved hindered majority from accessing quality eye services. The greater majority remained in the community with their problem until they became blind. The observation in this rural community is not peculiar to Etche as similar observations have been reported in other rural communities in Nigeria [10,11,12]. The causes of blindness in this study were preventable and treatable if detected early.

CONCLUSION

Farmers were the most affected group and females the most affected gender. This may be attributed to the fact that these communities are mainly agrarian with high participation of women. Exposure to trauma, foreign body, dust and ultra violet rays is common to farmers. Presbyopia and refractive errors were the most common ocular problem probably because majority of the people included in the study were above 40 years of age

The lack of regular health education, inaccessibility

of health facilities and the nature of their occupation may have been a contributing factor to the ocular diseases found in this study.

RECOMMENDATION

Regular screening, eye check and treatment of common eye diseases were highly recommended. The need to wear protective eye devices such as goggles could reduce exposure to ultraviolet radiation and offer protection against ocular injury. The state Government should make eye care services available.

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