

Ocular Findings among Officers of Federal Road Safety Commission (FRSC) in Abak Local Government Area of Akwa Ibom State, Nigeria

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Abstract

Background: The aim of the study was to assess the ocular findings among officers of the Federal Road Safety Commission (FRSC) in Abak Local Government Area of Akwa Ibom State of Nigeria.

Methodology: This was a cross-sectional descriptive study involving thirty (30) officials of FRSC in Abak Local Government area of Akwa Ibom State. Demography was obtained by interviewer-administered questionnaire. Distant visual acuity was assessed at 6 m with the Snellen's chart while near vision assessment was at 33 cm with a Sussex vision R near vision chart. External eye examination was with pen touch while funduscopy was with direct Ophthalmoscope. Intraocular pressure was measured with Perkins tonometer. The visual field evaluation was demonstrated by confrontational field assessment. Officers requiring further evaluation were referred to a Tertiary Health Facility.

Result: Most of the subjects interviewed were between 30 to 49 years, of which 30 - 39 years were 46.67%, much more than the rest of the age groups. While seventy percent (70%) of the subjects were male, 30% were female. About 6.67% have severe visual impairment and eleven percent (11.1%) had Glaucoma, Refractive error and were Glaucoma suspects, with the least 2.87% having cataract. A Statistical significant association was observed between respondents age and visual acuity on the left eye ($p = 0.02$).

Conclusion: Visual assessment and correction of FRSC officials is as important as that of drivers in preventing Road Traffic Accident (RTA) because it takes an official with good vision to properly assess and certify a driver.

Keywords: Ocular Findings Officers; Federal Road Safety Commission; Nigeria

Introduction

The causes of RTAs are multifactorial: poor maintenance of roads and vehicles, absence of appropriate road signs and poor driving skills. In addition, deplorable habits of drivers from inadequate training, inattentiveness, alcoholic intoxication, drug intake, excessive speeding, wrong overtaking, poor knowledge of traffic regulations, and physical disability [1]. Good vision is a fundamental component of safe driving, being one of the most important sensory factors for this activity, accounting for about 95% of all sensory requirements [2]. For this reason, drivers with good vision have an advantage over those with poor vision as far as RTAs are concerned. RTAs are a major

health problem worldwide [3] and a leading cause of death from trauma [4,5], with an estimated annual death of 1.2 million and up to 50 million injuries worldwide [6].

About 59% of road traffic deaths occur among people aged 15 - 44 and 90% occur in low- and middle-income countries in spite of having a much smaller proportion of the world’s vehicles [7]. Half of the road traffic fatalities are among vulnerable road users: pedestrians, cyclists and riders of motorized two-wheelers [8].

Road traffic injuries (RTI) can be prevented if governments address road safety issues using a comprehensive approach, involving multiple sectors (transport, police, health, education). Initiatives aimed at changing road users’ behaviour are also important. These include enactment and enforcement of laws covering the key risk factors and increasing public awareness of these laws [9].

In Nigeria, the regulatory body that ensures the safety of our roads is the FRSC. The FRSC is an authority in Nigeria charged with the responsibility of preventing accident and consequential loss of lives on Nigerian roads among others. They ensure among other things that the drivers have license to drive and have been certified visually fit for driving. They also ensure that all the vehicle documents are up to date. To achieve this task, they also need optimal vision. However, most of the studies that had been done in relation to RTA were focused on the vision of drivers with little or no emphasis on the vision of road safety officials thus necessitating this study.

Methodology

This was a cross-sectional descriptive study involving Thirty (30) officials of FRSC in Abak Local Government area of Akwa Ibom state. Demography was obtained by interviewer-administered questionnaire. Distant visual acuity was assessed at 6 m with the Snellen’s chart while near vision assessment was at 33 cm with a Sussex vision R near vision chart by an Optometrist.

Those who were presbyopic had their corrections done. External eye examination was done with pen touch while fundoscopy was performed with a direct ophthalmoscope by an Ophthalmologist. Intraocular pressure was measured with Perkins tonometer. The visual field evaluation was demonstrated by confrontational field assessment. The diagnosis of glaucoma was based on cup to disc ratio (CD) > 0.5 or CD asymmetry of at least 0.2 between fellow eyes and intra ocular pressure of > 21 mmHg while itching, tearing, redness and stringy discharge were criteria for the diagnosis of allergic conjunctivitis. Officers requiring further evaluation were referred to the eye clinic of University of Uyo Teaching Hospital (UUTH), Uyo.

Result

Most of the subjects were between 30 to 49 years, with the age range of 30 - 39 years constituting 46.67%, and those ranging 40 - 49 years 33.33% with a mean age 40.50 ± 8.01 years as shown in table 1. Seventy percent (70%) of the subjects were males while 30% were females.

Characteristics	Frequency n = 30	Percentage (%)
Age		
20 - 29	1	3.33
30 - 39	14	46.67
40 - 49	10	33.33
50 - 59	5	16.67
Mean	40.50 ± 8.01 years	
Sex		
Male	21	70.00
Female	9	30.00

Table 1: Demographic characteristics.

Eighty percent (80%) of the subjects had normal vision in the right eye while 70% had normal vision in left eye. About 6.67% of the subjects had severe visual impairment equally in both eyes as seen in table 2.

Characteristics	Frequency n = 30	Percentage (%)
Right Eye		
1. Normal (6/4-6/6)	24	80.00
2. Mild Visual Impairment (< 6/9 - 6/18)	4	13.33
3. Severe Visual Impairment (6/60 - ≥ 3/60)	2	6.67
Left Eye		
1. Normal (6/4 - 6/6)	21	70.00
2. Mild Visual Impairment (< 6/9 - 6/18)	7	23.33
3. Severe Visual Impairment (6/60 - ≥ 3/60)	2	6.67

Table 2: Visual acuity.

The VCDR is as shown in table 3.

Characteristics	Frequency n = 30	Percentage (%)
Right (n = 27)		
0.2	2	7.41
0.3	10	37.04
0.4	4	14.81
0.5	4	14.81
0.6	4	14.81
0.7	1	3.70
0.8	1	3.70
Hazy	1	3.70
Left (n = 26)		
0.2	1	3.85
0.3	9	34.62
0.4	4	15.38
0.5	4	15.38
0.6	4	15.38
0.7	1	3.85
0.8	1	3.85
Hazy	1	3.85
TEMP PAL	1	3.85

Table 3: Vertical Cup Ratio (VCDR).

Presbyopia was found in 25.0% of the subjects, Allergy 19.44%, Glaucoma suspect, Glaucoma and Refractive errors at 11.11% each as shown in table 4. The least (2.78%) were Cataract and Maculopia.

Characteristics (Multiple Response) (n = 36)	Frequency n = 30	Percentage (%)
Presbyopia	9	25.00
Allergy	7	19.44
Glaucoma suspect	4	11.11
Glaucoma	4	11.11
Refractive error	4	11.11
Strabismus	2	5.56
Pterygium	2	5.56
Pingueculum	2	5.56
Cataract	1	2.78
Maculopathy	1	2.78

Table 4: Diagnosis.

Among the presbyopes, 30% needed +1.75 DS correction. The rest is as shown in table 5.

Characteristics (n = 10)	Frequency n = 30	Percentage (%)
1.24	1	10.00
1.25	2	20.00
1.5	1	10.00
1.75	3	30.00
2.5	1	10.00
3	2	20.00
Mean	1.90 ± 0.69	

Table 5: Correction.

No statistical significant association was observed between respondents age and visual acuity on the right eye (p = 0.352) as shown in table 6.

Age	Visual Acuity Right Eye			Total	Df	Chi-Square (χ²) (p-value)
	Normal (6/4-6/6)	Mild Visual Impairment (6/9-6/18)	Severe Moderate Impairment (6/60- ≥3/60)			
≤ 35 years	7 (29.17)	0 (0.0)	1 (50.0)	8 (26.67)	2	2.08 (0.352)
> 35 years	17 (70.83)	4 (100.0)	1 (50.0)	22 (73.33)		
Total	24	4	2	30		

Table 6: Association between Age of respondents and Visual Acuity (VA)

df=Degree of Freedom.

Age	Visual Acuity Left Eye			Total	Df	Chi-Square (χ^2) (p-value)
	Normal (6/4-6/6)	Mild Visual Impairment (6/9-6/18)	Severe Moderate Impairment (6/60- \geq 3/60)			
≤ 35 years	6 (28.57)	0 (0.0)	2 (100.0)	8 (26.67)	2	8.08 (0.02)*
> 35 years	15 (71.43)	7 (100.0)	0 (0.0)	22 (73.33)		
Total	21	7	2	30		

Table 7: Association between Age of respondents and Visual Acuity (VA)

*Statistically significant ($p > 0.05$) df =degree of freedom.

A Statistical significant association was observed between respondents age and visual acuity on the left eye ($p = 0.02$).

Discussion and Conclusion

The causes of RTA are multifactorial. These include bad roads, over speeding, poor driving skills by uncertified drivers and poor vision. Among these factors, poor vision is paramount because it’s a factor that can lead to RTA in isolation even when the other factors are checked. The regulatory body that assess drivers fitness to drive in Nigeria is the Federal Road Safety Commission [10]. Most of the studies on RTA had focused on drivers but it takes a road safety official with optimal vision to certify a driver fit for driving.

The study showed that majority of the road safety officials were men (70%). This is understandable as men are apt to be involved in outdoor activities. About half of the subjects (50%) were above forty years which is about the age of presbyopia. The entire presbyopic subject had no correction at the time of the study. This would obviously make it difficult for this group to assess vehicle particulars while on duty. Such Officials may erroneously read and interpret the authenticity and validity of drivers licence and as such endangering the lives of such driver and other road users. It was reported that approximately 2.5% of the drivers had a visual acuity worse than the minimum required for driving in Ghana (6/9), which was comparable to that reported in Nigeria for commercial drivers [11]. This could be due to poor visual assessment by unqualified persons or poor confirmation by road safety officials who might also be visually impaired.

Eleven percent (11.1%) of the subjects had glaucoma. Although automated perimetry was not done to ascertain the level of visual field loss but those that may have had field loss are in danger of being victims of RTA themselves as they may not have a clear judgment of moving vehicle at the extremes of roads while carrying out their duty. About 6.67% have severe visual impairment and this will obviously impact on their proficiency at work while at the same time endangering their lives while on the road. Only 2.78% had cataract. Although cataract especially senile cataract is the commonest cause of blindness but only 16.67% of the subjects were above 50 years.

Since there was a statistical significant association between age and visual acuity, it would be better to minimize the extent of exposure of the older staff to busy roads to avoid risk to their lives and other road users.

Recommendation

It will be appropriate to subject officials of Federal Road safety Commission or any road regulatory agency to periodic ocular check so as to optimize their proficiency at duty and also reduce the risk of RTA.

Bibliography

1. Federal Republic of Nigeria official Gazette: National Road Traffic Regulations. 79th edition. Lagos Nigeria: The Federal Government press (2004): B173-B303.

2. Bener A., *et al.* "Visual impairment and motor vehicle accidents". *Middle East Journal of Emergency Medicine* 4 (2004): 1-9.
3. Museru LM., *et al.* "Road traffic accidents in Tanzania: a ten year epidemiological appraisal". *East and Central African Journal of Surgery* 7.1 (2002): 23-26.
4. Solagberu BA., *et al.* "Epidemiology of trauma deaths". *West African Journal of Medicine* 22.2 (2003): 177-181.
5. Ekere AU., *et al.* "Surgical mortality in emergency room". *International Orthopaedics* 28.3 (2004): 187-190.
6. Krug EG., *et al.* "The global burden of injuries". *American Journal of Public Health* 90.4 (2000): 523-526.
7. "Global status report on road safety 2013. Supporting a decade of action". Geneva: World Health Organization (2013).
8. "Global status report on road safety 2015". Geneva: World Health Organization (2015).
9. "World report on road traffic injury prevention: summary". Geneva: World Health Organization (2004).
10. Federal Republic of Nigeria Official Gazette. The Federal Road Safety Commission Decree No. 4 Federal Government Press Lagos (1988): 7(82)A 813-824.
11. Agunloye O. In: Guidelines for National Drivers Licence Scheme. Public Education Department Headquarters, Lagos, Federal Road Safety Commission (1990): 6-9.

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