

# Visual Impairment Among Public Servants In Abuja, Nigeria

N Njepuome, U Onyebuchi, M Onwusoro, M Igbe

## Citation

N Njepuome, U Onyebuchi, M Onwusoro, M Igbe. *Visual Impairment Among Public Servants In Abuja, Nigeria*. The Internet Journal of Ophthalmology and Visual Science. 2012 Volume 9 Number 1.

## Abstract

Screening was carried out in October, 2007 to assess the prevalence of visual impairment in Federal Public Servants in the Federal Secretariat, Phase 3, Abuja, Nigeria, during a World Sight Day celebration. Sensitization of the workers took place through radio talk, circulars, posters and banners either distributed or placed at strategic places in and around the Secretariat before the day of the screening. The passers-by were encouraged to have their eyes tested to mark the World Sight Day. Of the 88 Public Servants screened during the celebration of World Sight Day, 88.7% had refractive errors, 1.1% had cataract, 2.3% had pterygium, 3.4% had disc cupping, 1.1% had chalazion and 3.4% had conjunctivitis. Individuals made up of 50 males and 38 females came for the screening. Their ages ranged from 25 years to 60 years. The males had more visual impairment than the females (56.8% versus 43.2%). Individuals of age group of 35-44 years had the highest prevalence of visual impairment of 45.5%, followed by those that were 25-34 years with 22.7%, 45-54 years had 20.5% and >54 years of age had 11.3% respectively. Our screening shows that refractive errors were the leading complaint amongst the civil servants in Abuja. Provision of services such as affordable, reasonable-quality spectacle to individuals who need them after being identified through vision screening is as important as the vision screening itself.

## INTRODUCTION

Visual perception is one of the main sources through which the human being understands the world around him, yet a number of people have their visual modality either mildly or profoundly impaired (Crew and Campbell 2004). However, if available knowledge and skills are made accessible to those communities in greatest need, much of this needless blindness could be alleviated. When an individual is visually handicapped, his learning, social interaction and general adjustment are adversely affected (Crew and Campbell 2004). In older adults, decreased vision is associated with myriad of problems such as falls, hip fractures, family stress, and depression (Crew and Campbell 2004). Visual impairment has far-reaching implications for the individual and the society. Vision disorders are also a safety risk to all automobile drivers and passengers (Rizzo and Kellison 2004). The major causes of blindness vary widely from region to region, being largely determined by socioeconomic development, and the availability of primary health care services. In high income countries, lesions of the optic nerve and higher visual pathways predominate as the cause of blindness, while corneal scarring from trachoma, measles, vitamin A deficiency, the use of harmful traditional eye remedies, and ophthalmia neonatorum are major causes in

low-income countries (Thylefors et al.1995). Other significant causes in all countries are cataract, congenital abnormalities and also refractive errors (Thylefors et al.1995). Aging is the most important risk factor for developing cataracts because the lens naturally becomes more opaque with age. In many parts of the world refractive error is one of the most common causes of visual impairment (Dandona and Dandona 2001). Recent data suggest that a large number of people are blind in different parts of the world due to high refractive error because they are not using appropriate refractive correction (Dandona and Dandona 2001). In addition to blindness due to naturally occurring high refractive error, inadequate correction of aphakia after cataract surgery is also a significant cause of blindness in developing countries. Blindness due to refractive error in any population is indicative of poor eye care services in general in that population since treatment of refractive error is one of the simplest and most effective forms of eye care.

Diabetic retinopathy also results in vision loss as a result of several diabetes-related changes in the eye. However, early recognition and treatment (including laser therapy) can prevent blindness (American Academy of Ophthalmology 2003, American Optometric Association 2002). Treatment recommendations emphasize the need for aggressive blood

glucose and blood pressure control to reduce the incidence, progression, and severity of diabetic retinopathy (Fong et al. 2004). Strategies such as mass vision screening programmes need to be adapted to detect and thus provide care for individuals suffering from refractive error blindness (Dandona and Dandona 2001).

This is the findings of the eye screening done on the Federal Civil Servants, Abuja as one of the activities to mark the World Sight Day 2007.

## MATERIALS AND METHODS

**Methodology:** A screening center was set up in October, 2007 at the Federal Secretariat Phase 3 Abuja during the 2007 World Sight Day celebration. World Sight Day is a day set aside by WHO and IAPB for governments, communities and individuals to take action and address the problems of blindness. Sensitization of the workers took place through radio talk, circulars, posters and banners either distributed or placed at strategic places in and around the Secretariat before the day of the screening. All cadres of eye care personnel were involved in the screening exercise and the Honourable Minister for Health, local dignitaries and passers-by were encouraged to have their eyes tested to mark the World Sight Day. Following examination, those who had visual impairment that could be treated at the screening centers were treated and counseled while those who needed follow-up were referred to either the nearby Federal Eye Clinic or the Asokoro District Hospital, depending on the condition.

**Statistical analysis:** Difference between proportions was evaluated using the chi square test. Statistical significance was achieved if  $P < 0.01$

## RESULTS

Individuals made up of 50 males and 38 females came for the screening. Their ages ranged from 25 years to 60 years. Of the 88 Public Servants screened 78(88.7%) had refractive errors, 1(1.1%) had cataract, 2(2.3%) had pterygium, 3(3.4%) had disc cupping, 1(1.1%) had chalazion and 3(3.4%) had conjunctivitis. 50 males had visual impairment as compared to 38 females although there was no significant difference between the two sexes and the visual impairment seen ( $X^2 = 3.89 < 6.685$ ,  $P < 0.01$ ,  $df=5$ ). See table 1. Individuals of age group of 35-44 years had the highest prevalence of visual impairment, 40(45.5%), followed by those that were 25-34 years with 20(22.7%), 45-54 years had 18(20.5%) and >54 years of age had 10(11.3%) respectively.

See table 2. Statistically there was no significant difference between the age and visual impairments. ( $X^2 = 25.00$ ,  $P < 30.578 < 0.01$ ,  $df=15$ ). Of the 50 males, 43 had refractive errors, 1 had unilateral cataract, 2 had bilateral pterygium, 1 had disc cupping, 2 had chalazion and 1 had conjunctivitis, while among the 38 females 35 had refractive errors, 1 had chalazion and 2 had conjunctivitis.

**Figure 1**

Table 1: Types of visual impairment among public servants in Abuja by Sex classification.

Types of visual impairment	Male		Female		total examined	total positive/ infection rate
	number examined	number positive/ infection rate	number examined	number positive/ infection rate		
Refractive errors	43	43(55.1)	35	35(44.9)	78	78(88.7)
Unilateral cataract	1	1(100.0)	-	-(0.0)	1	1(1.1)
Bilateral pterygium	2	2(100.0)	-	-(0.0)	2	2(2.3)
Disc cupping	1	1(100.0)	-	-(0.0)	1	1(1.1)
Chalazion	2	2(66.7)	1	1(33.3)	3	3(3.4)
Conjunctivitis	1	1(33.3)	2	2(66.7)	3	3(3.4)
Total	50	50(56.8)	38	38(43.2)	88	88

**Figure 2**

Table 2: Age Related Prevalence of visual impairment among public servants in Abuja.

Age	refractive errors(%)	Unilateral cataract(%)	bilateral pterygium(%)	disc cupping(%)	chalazion(%)	conjunctivitis(%)	total number infection rate
25-34	17(21.8)	-(0.0)	-(0.0)	-(0.0)	1(33.3)	2(66.7)	20(22.7)
35-44	38(48.7)	-(0.0)	1(50.0)	-(0.0)	1(33.3)	-(0.0)	40(45.5)
45-54	16(20.5)	-(0.0)	1(50.0)	-(0.0)	1(33.3)	-(0.0)	18(20.5)
>54	7(9.0)	1(100.0)	-(0.0)	1(100.0)	-(0.0)	1(33.3)	10(11.3)
Total	78(88.7)	1(1.1)	2(2.3)	1(1.1)	3(3.4)	3(3.4)	88

## DISCUSSIONS

Our screening shows that refractive errors were the leading complaint amongst the civil servants with a prevalence of 88.7%. It was higher than the prevalence in studies of self presenter in South Africa, Nigeria, and Uganda (Herse 1991, Umeh 1999, Kamali et al. 1999) of which refractive error was found to be the single most important diagnosis in 70%, 37.4%, and 48% of patients respectively. In another study in Nigeria refractive error was the cause of 59% of visual loss in those between 5 and 15 years of age (Umeh 1999). In other studies in Nigeria, the prevalence of low vision was reported to be 0.33%, 0.9% and 11.8% in all age groups examined (Akogun 1992, Ezepeue 1997, Adeoye 1996).

With the 35-44 years individuals having higher prevalence of visual impairment of 40%, the result agrees with studies carried out in 2004 by The Eye Disease Prevalence Research Group which showed that 1 in 28 Americans aged older than

40 years is blind or has low vision (Congdon et al., 2004a, Prevent Blindness America, National Eye Institute 2002). Among community-dwelling adults, the prevalence of low vision and blindness increases dramatically with age in all racial and ethnic groups (Gohdes et al., 2005).

The prevalence of blindness due to refractive error has been reported to be 0.2%, 0.05%, 0.08%, 0.04%, and 0.05 for all ages in Pakistan, India, Turkey, Lebanon, Ethiopia and Tunisia respectively (Memon 1992, Negrel et al., 1996, Mansour et al., 1997, Zerihun and Mabey 1997, Ayed et al., 1993). If older age groups are considered, the prevalence of refractive error blindness is likely to be higher because of cumulative effects, than that for all age groups taken together (Resnikoff and Pararajasegaram 2001). This may have accounted for the high prevalence recorded in our study.

In our investigation glaucoma was 1.1%. In other studies carried out in Nigeria, 17.6% and 11% was reported for glaucoma (Akogun 1992, Ezepue 1997).

In our study, only one unilateral cataract case was discovered in a male of >54 years of age. In other studies cataract prevalence was reported to be 70.6% and 48% in Nigeria (Akogun 1992, Ezepue 1997). Cataracts is one of the Age-Related Eye Diseases (AREDS) that lead to low vision and blindness are a growing challenge for public health professionals (American Academy of Ophthalmology 2003).

Cataracts are the most common AREDS (Steinberg et al., 1993). As demonstrated by surveys, approximately half the blindness in Africa is due to cataract. The prevalence of blinding bilateral cataract in Africa is estimated to be around 0.5%; however, this figure is obviously dependent on the regional rate of cataract surgery. There is no reliable information on the incidence of cataract among Africans. Studies of race as a risk factor for cataract have been done in the United States and the Caribbean but it may not be valid to generalize these findings to Africa since there are many differences in other risk factors (notably diabetes) between the populations (West et al., 1998). In a community study, more than 17% of Americans aged 40 and older were estimated to have one or more cataracts, and 5% reported having had surgery to remove a cataract from one or both eyes (Congdon et al., 2004b). Cataracts were the cause of about 50% of cases of vision loss in white, African American, and Hispanic people (Congdon et al., 2004a). Females had slightly higher rates of cataract incidence for reasons that are not completely known (Lewallen and

Courtright 2001).

In conclusion, our screening shows that refractive errors were the leading complaint amongst the civil servants in Abuja. Provision of services to individuals who need them after being identified through vision screening is as important as the vision screening itself. Therefore affordable, reasonable-quality spectacle should be made available during screening exercise to make it meaningful to those tested. Sufficient numbers of personnel to perform reasonable quality refraction need to be trained in developing countries. Also adequate infrastructures has to be developed in underserved areas of the country to facilitate the logistics of providing affordable reasonable-quality eye care services to individuals suffering from eye disorders.

The data provides a call to action. To decrease morbidity from vision loss and blindness, public health professionals must increase public awareness about vision; initiate and coordinate timely screening, diagnosis, and treatment to prevent or correct vision loss; ensure continuity of care between medical treatment and supportive care for vision loss and monitor the status of visual impairment by using new methods for identifying people affected and their extent of vision loss.

### ACKNOWLEDGEMENT

The authors wish to thank the Christofell Blinden Mission, Optometric Association of Nigeria, the Nigerian Ophthalmic Nurses Association and the Ophthalmological Society of Nigeria for their contributions to the World Sight Day, 2007. Special thanks go to Dr. M.A. Mafe in the Federal Ministry of Health for her critical reading of the manuscript. The materials for this manuscript were derived in part from the World Sight Day, 2007.

### References

- r-0. Adeoye A. (1996). Survey of blindness in rural communities of south-western Nigeria. *Trop Med Int Health*. 1:672-676.
- r-1. Akogun O.B. (1992). Eye lesions, blindness and visual impairment in the Taraba river valley, Nigeria and their relation to onchocercal microfilariæ in skin. *Acta Trop*. 51:143-149.
- r-2. American Academy of Ophthalmology. (2003). Preferred practice pattern: diabetic retinopathy, 2003 [monograph on the Internet]. San Francisco: American Academy of Ophthalmology; [cited 2004 August 12]. Available from: <http://www.aao.org>.\*
- r-3. American Optometric Association. (2002). Optometric clinical practice guideline: care of the patient with diabetes mellitus. Third revision 2002, [monograph on the Internet]. St. Louis (MO): American Optometric Association; [cited 2004 August 09]. Available from: <http://www.aoa.org>.\*
- r-4. Ayed S. et al. (1993). Prevalence and causes of

- blindness in Tunisia Republic-result of a national survey conducted in. *Sante*. 1998, 8:275-282.
- r-5. Congdon N., O'Colmain B., Klaver C.C., Klein R., Munoz B., Friedman D.S., et al. (2004a). Causes and prevalence of visual impairment among adults in the United States. *Arch Ophthalmol*. 122:477-85.
- r-6. Congdon N., Vingerling J.R., Klein B.E., West S., Friedman D.S., Kempen J., et al. (2004 b). Prevalence of cataract and pseudophakia/aphakia among adults in the United States. *Arch Ophthalmol*. 122:487-94.
- r-7. Crew J.E. and Campbell V.A. (2004). Vision impairment and hearing loss among community-dwelling older Americans: implication for health and functioning. *Am J Public Health*. 94:823-9.
- r-8. Dandona R. and Dandona L. (2001). Refractive error blindness. *Bulletin of the World Health Organization*. 79:237-243.
- r-9. Ezepeue U.F. (1997). Magnitude and causes of blindness and low vision in Anambra State of Nigeria (results of 1992 point relevance survey). *Public Health*. 111:305-309.
- r-10. Fong D.S., Aiello L., Gardner T.W., King G.L., Blankenship G., Cavallerano J.D., et al. (2004). American Diabetes Association. Retinopathy in diabetes. *Diabetes Care*. 27 Suppl 1:S4-87.
- r-11. Gohdes D.M., Balamurugan A., Larsen B.A. and Maylahn C. (2005). Age-related eye diseases: an emerging challenge for public health professionals. *Prev Chronic Dis* [serial online] 2005 Jul [date cited]. Available from: URL: [http://www.cdc.gov/pcd/issues/2005/jul/04\\_0121.htm](http://www.cdc.gov/pcd/issues/2005/jul/04_0121.htm)
- r-12. Herse P. (1991). An ophthalmic survey of African patients presenting at rural eye clinics in South Africa. *Optometry Vis Sci*. 68:738-742.
- r-13. Kamali A., Whitworth J.A.G., Ruberantwari A., et al. (1999). Causes and prevalence of non-vision impairing ocular conditions among a rural adult population in SW Uganda. *Ophthalmic Epidemiol*. 6:41-48.
- r-14. Lewallen S. and Courtright P. (2001). Blindness in Africa: present situation and future needs *Br J Ophthalmol*. 85:897-903 (August).
- r-15. Mansour A.M. et al. (1997). National survey of blindness and low vision in Lebanon. *British Journal of Ophthalmology*. 81:905-906.
- r-16. Memon M.S. (1992). Prevalence and causes of blindness in Pakistan. *Journal of Pakistan Medical Association*. 42:196-198.
- r-17. Negrel A.D., Minassian D.C. and Sayek F. (1996). Blindness and low vision in south-east Turkey. *Ophthalmic Epidemiology*. 3:127-134.
- r-18. Prevent Blindness America, National Eye Institute. (2002). Vision problems in the U.S.: prevalence of adult vision impairment and age-related eye disease in America. Schaumburg (IL): Prevent Blindness America.
- r-19. Resnikoff S. and Pararajasegaram R. (2001). Blindness prevention, past and present and future. *Bulletin of the World Health Organization*. 79:93.
- r-20. Rizzo M., Kellison I.L. (2004). Eyes, brains, and autos. *Arch Ophthalmol*. 122:641-7.
- r-21. Steinberg E.P., Javitt J.C., Sharkey P.D., Zuckerman A., Legro M.W., Anderson G.F., et al. (1993). The content and cost of cataract surgery. *Arch Ophthalmol*. 111:1041-9.
- r-22. Thylefors B. et al. (1995). Available data on blindness (update 1994). *Ophthalmic Epidemiology*. 25-39.
- r-23. Umeh R.E. (1999). The causes and profile of visual loss in an onchocerciasis-endemic forest-savanna zone in Nigeria. *Ophthalmic Epidemiol*. 6:303-315.
- r-24. West S.K., Munoz B., Schein O.D., Duncan D.D. and Rubin G.S. (1998). Racial differences in lens opacities: the Salisbury Eye Evaluation (SEE) project. *Am J Epidemiol*. 148:1033-9.
- r-25. Zerihun N. and Mabey D. (1997). Blindness and low vision in Jimma Zone, Ethiopia: Result of a population-based survey. *Ophthalmic Epidemiology*, 4:19-21.

**Author Information**

**N. Njepuome, MBBS, FMCP**

Federal Ministry of Health, Abuja, Nigeria

**U. Onyebuchi, MBBS, DOM**

Federal Ministry of Health, Abuja, Nigeria

**MI Onwusoro, OD, MBA**

Federal Ministry of Health, Abuja, Nigeria

**MA Igbe, M.Sc.**

Federal Ministry of Health, Abuja, Nigeria