

Knowledge and Attitude of Guardians towards Eye Health of Primary School Pupils in Ilorin, Nigeria

¹A. A. AYANNIYI, ¹F. O. OLATUNJI, ¹A. O. MAHMOUD, R. O. AYANNIYI

¹Department of Ophthalmology, University of Ilorin Teaching Hospital, Nigeria

Department of Pharmacology and Therapeutics, University of Ilorin, Nigeria

Correspondence:

Abdulkabir Ayansiji Ayanniyi

Mobile phone: +2348058548765.

Email: ayanniyikabir@yahoo.com

Summary

Objective: To determine guardians' knowledge and attitude towards pupils' eye health and draw implication for designing children-oriented ocular health messages.

Methods: A survey of 1,393 guardians selected through multistage random sampling in Ilorin, Nigeria. Using structured questionnaire, information sought included guardians' demographic characteristics, relationship to pupils, occupation, awareness of eye specialists, perception of normal vision, pupils' eye complaints, and ways of treating children eye conditions. Data analysis was done with SPSS 12.0.1. The test of significance was performed using Chi square test and significance was taken at $p < 0.05$.

Results: Guardians comprised 689 (49.4%) males and 704 (50.6%) females, mean age 43.61 SD 11.45. Most (88.54%) were pupils' parents and (11.46%) were relations ($n=1,318$); (55.15%) were in low-paying occupations ($n=1,311$); (87.92%) were aware of eye specialists, (12.08%) unaware, ($n=1192$); (97.27%) adjudged normal vision at least important, (2.73%) not important ($n=1,174$). Pupils' eye complaints ($n=914$) included pain (26.04%), itching (24.73%), redness (21.12%), discharge (8.53%), blur vision (8.21%), photophobia (7.33%) and lacrimation (4.05%). Guardians ($n=1,069$) managed pupils' eye diseases using hospital treatment (61.65%), neglect (21.33%), self medication (9.26%) and traditional medication (7.76%). There were no significant associations between guardians' ways of managing pupils' eye diseases and their views on normal vision ($p = 0.940$); awareness of eye care specialists ($p = 0.952$); and economic occupational grouping ($p = 0.959$).

Conclusion: The negative implications of neglecting eye diseases and use of self and harmful traditional eye-medications by some of the guardians need to be discouraged by appropriate eye health education.

Key words: children ocular health, childhood blindness, guardian health seeking habits

The control of blindness in children is a priority within the World Health Organizations Vision 2020 programme.¹ Many of the causes of blindness in children

are either preventable or treatable.^{2,3} Strategies towards preventing visual impairment and blindness among the children need to be specific and activity based to achieve

desire goal. One of such strategies is education of the pupils' guardians on practices that can be detrimental to children ocular health. Health education is an essential part of primary health care and its value among target groups to prevent ocular morbidity has been underscored.^{2,4}

Meanwhile, many studies have been conducted on utilisation of eye care services across the globe elucidating barriers to uptake of eye care services.^{5,6,7} The barriers such as poor access⁸ to eye facility, poverty⁹, ignorance, 'illiteracy and beliefs'¹⁰ can play significant roles in guardians' not seeking a particular eye care treatment. In a study in rural India, despite the felt need, the major reasons for not seeking eye care included lack of money and lack of time to spare among others.⁵ Moreover, individuals including pupils' guardians may be culturally biased to believe that eye diseases need no treatment.⁶ Furthermore, people including guardians are exposed to choices between orthodox and alternative eye care in the community.⁸

Guardians wield important influence on their wards not only on their daily living but also in management of their eye conditions. Eye health seeking habit varies among the people including the guardians across and within the society.^{8,9} The kind of care sought can affect the outcome of ocular ailments. This is more important in children who are dependent on their guardians for decisions on their needs including whether they should receive or not and what kind of treatment should they receive for their ocular conditions.

Interestingly, most guardians would prefer what they consider to be the best for their wards including eye treatment. The implication of this 'conditional available' best decision of the guardians is better imagined when it is 'incorrect' as in the treatment of children ocular conditions. Indeed literature is replete with certain 'incorrect' decisions by the guardians on the children ocular condition. Some of these practices had been reported to cause visual impairment and blindness.^{11,12,13,14,15} The objective of this study was to determine the knowledge and attitude of guardians towards primary school pupils eye health and draw implication for designing children-oriented ocular health message that could reduce visual impairment and avoidable blindness among children.

Materials and Methods

This study forms part of a large ocular health survey among school children in Ilorin, Nigeria. Ilorin is one of Nigerian State capital cities with fair share of tertiary, secondary and primary eye care facilities. The study was carried out between July 2005 and January 2006 among 1,393 guardians of school children from 10 randomly selected primary schools within Ilorin metropolis. Ethical clearance for the study was obtained from University of Ilorin Teaching Hospital. There were initial advocacy visits to the local School Board and the selected Schools to convey the objectives and importance of this study with a

view to gaining support and permission to carry out this study among guardians of primary school children in Ilorin, Nigeria.

The school pupils were selected through a multistage random sampling for the large ocular health survey as detailed elsewhere.¹⁶ The sample size of surveyed pupils was determined using the equation: $n = z^2pq/d^2$. Where n is the desired sample size, z is the standard normal deviate (z is taken as 1.96 which corresponds to the 95% confidence level), p is the proportion (prevalence) of the children population estimated to have visual problem and d is the degree of accuracy.¹⁷ The (average) prevalence (p) of ocular pathology among school children from previous studies in Nigeria, Ilesa (15.47%)¹⁸, Enugu (12.32%)¹¹, Lagos (21.00%)¹⁹, Jos (19.30%)²⁰, Ibadan (14.4%)²¹ was 17%. Thus $p = 0.17$, $q = 1.0 - p = 0.83$ and d was set at 2% (i.e. 0.02). Therefore, the calculated minimal sample size (n) was 1,355. However, the study was carried out on 1,393 pupils. The guardians of the sampled pupils were the subjects of this study. Each of the selected pupils was given a questionnaire to take home for completion by his/her guardian and this was returned by the pupil.

The information sought from the guardians included guardians' demographic characteristics, relationship to pupils, occupation, awareness of availability of eye care specialists in Ilorin; Nigeria, perception of normal vision, pupils' common eye complaints, and their most usual ways of managing children eye conditions. The questionnaire had been pre-tested and validated through a pilot study carried out before the commencement of the survey. The guardians that failed to give consent (by signing/thumbprint the consent section) and/or did not attempt the questionnaire were excluded in the analysis.

In this study, the guardians were grouped into 3 paying occupational groups based on type of job and estimate of monthly earnings. Low-paying occupation [monthly earnings $\leq$ 15,000 naira e.g public servants below level 5, pensioners, farmers, petty traders, majority of artisans (vulcanisers, shoe repairers)]. Medium-paying occupation [monthly earnings between 16,000-50,000 naira e.g teachers, nurses, police (middle cadre), military personnel (middle cadre), medium scale business concern, some artisans (drivers, fashion designers, motor mechanics)]. High-paying occupation [monthly earnings >50,000 naira e.g doctors, engineers, lawyers, tertiary institution lecturers, senior civil / public officers, business executives, political office holders]. The Housewife, students, aged and unemployed were excluded (indeterminable).

Data entry and analysis was done with Statistical Package for Social Sciences (SPSS) version 12.0.1. The test of significance was performed using Chi square test. The statistical significance was taken at $p < 0.05$.

Results

One thousand three hundred and ninety three

guardians comprising 689 (49.46%) males and 704(50.54%) females were enrolled for the study (n=1,393). The age range of 1,348 (96.8%) guardians who indicated their ages was 20-85, mean 43.61 SD 11.45. Each of median and modal ages was 45. Most guardians (1,080, 80.12%) were in the age range 30-60 years, while 195(14.47%) were below 30 years and 73 (5.4%) were above 60 years (n=1,348). The distribution of the guardians (n=1,318) included both parents, 958 (72.69%) among others (Figure 1).

Based on estimate of monthly earnings most guardians 723 (55.15%) were in the low-paying occupation (n=1,311) (Figure 2). Most guardians 1048 (87.90%) were aware of availability of eye care specialists in Ilorin, and 144 (12.10%) were unaware (n=1,192). The views of the guardians about normal vision included: very important 1049 (89.35%), important 93 (7.92%), not important 21 (1.79%) and not very important 11 (0.94%) (n=1,174). The most common eye complaints among 914 (65.61%) pupils included ocular pain 238 (26.04%), ocular itching 226 (24.73%) and redness of the eyes 193 (21.12%) among others (Table i). One thousand and sixty nine of 1,393 (76.74%) guardians indicated the ways they took care of eye diseases among pupils (Table ii). There were no significant associations between the ways the guardians used to manage pupils' eye diseases and their views on normal vision ($p=0.940$), awareness of eye care specialists ($p=.952$), and economic occupational grouping ($p=0.959$).

Table i : Distribution of common eye complaints among pupils

Eye complaints	No, n=194	%
Pain	238	26
Itching	226	25
Redness	193	21
Discharge	78	9
Blur vision	75	8
Photophobia	67	7
Lacrimation	37	4

Table ii : Distribution of guardians by pupils' eye health care choices

Health care choices	No, n=1069	%
Traditional eye medication	83	8
Self medication	99	9
Would not treat eye disease	228	21
Would go to the hospital	659	62

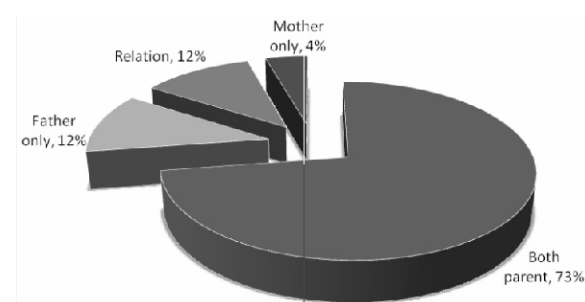


Figure 1: Relationship of the guardians to the pupils (n=1,318)

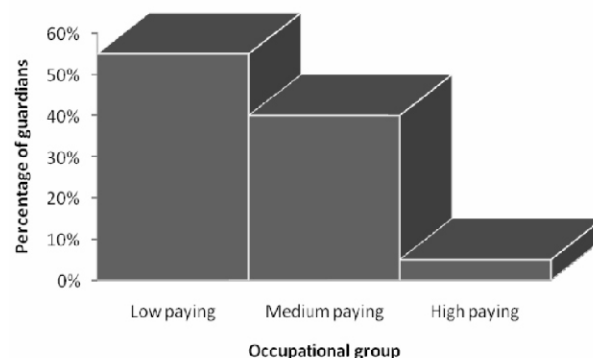


Figure 2: Occupation grouping of guardians by monthly monetary earnings (n=1,311).

Discussion

This study demonstrated that people seek alternative eye care treatment outside orthodox medical management with implications for ocular health as previously reported in some of the developing nations.^{8,9,12,22,23,24} The most common eye complaints among the school children in Ilorin such as ocular pain, ocular itching and redness of the eyes agree with the most common ocular disorders of refractive errors and vernal conjunctivitis among school children in Nigeria.^{11,13}

Expectedly, most guardians were both parents. However, this study found more 'fathers only' guardians compared to 'mothers only'. This might have implication for care of the pupils including their ocular health. Mothers were likely to care better for the pupils than fathers. However, the study community could be patrilineal and might account for the finding. Aside, most fathers were likely to be economically empowered than mothers to meet the needs of the children. Moreover, this study found relations being guardians to some pupils. The reason for this was not sought for in this study. It might suggest socio-cultural background with extended family values. However, the setting was unlikely to guarantee optimal attention to pupils' eye health.

This study found that most guardians (55.13%) were in the low-paying occupations. This should have implication for health care choices of the guardians as inability to afford eye care services was reported as important barrier to uptake of eye care services.¹² However, this study found no association between guardians' occupation (economic) groupings and their choices in managing pupils' ocular conditions ($p=0.959$). It was noteworthy that most guardians (61.65%) would take pupils to the hospital for the management of their eye diseases (conditions). This was not unexpected as most guardians (97.27%) were of the opinion that normal vision was at least important and were also aware of availability of the eye care specialists. This notwithstanding, guardians' opinion on normal vision and awareness of eye care specialists could not be associated with their choices of managing pupils' eye diseases ($p>0.05$). But for guardians' literacy levels not being sought, it would

have been of interest knowing their relationships with the guardians' choices of managing pupils' eye diseases among others. However, high level of education was associated with increased awareness of health conditions.²⁵⁻³⁰

It was of interest some guardians thought normal vision was not very important and some were unaware of the availability of eye care specialists. This was quite revealing considering the location of this study and available fair share of eye health care resources. Ignorance and illiteracy might be a major reason among the affected guardians. High percentage of illiteracy in the adult population was identified and attributed to poor ocular awareness among Nigerians.³¹ Some guardians would seek traditional mode of managing pupils' eye conditions. This could be borne out of the guardians' belief in traditional medicine, easy accessibility, relative affordability, misconceptions about orthodox eye care and of course some recorded successes of the traditional care.⁸ However, traditional mode of managing pupils' ocular conditions is potentially dangerous as many children have lost vision following the use of harmful traditional eye medications. There were reports of topical administration of herbal preparations/ local concoctions that accounts for the undesirable effects on the cornea and conjunctiva.
8,12,13,14,15,22,24

In Malawi school for the blind, one-quarter of blindness were traceable to harmful traditional eye medication.¹² The harmful traditional eye medication causes chemical burns and / or introduces pathogenic organisms which can worsen and / or initiate ocular insult.^{12,24} Guardians resorting to self medication while treating their wards' ocular conditions by applying drugs outside specialists prescriptions was an unhealthy practice and potentially dangerous. Self medication, potentially could worsen the visual outcome of salvageable eye conditions.⁹ This is of particular importance in steroid abuse in conditions such as microbial keratitis and glaucoma among others. Steroid abuse in self medication can lead to poor vision in vernal conjunctivitis.¹¹ Moreover, self medication is not only disapproved, the chance of inappropriate procurement and use is high.

The guardians who never bothered to manage pupils' eye conditions might be unaware of the implication of their actions. Such guardians might be attached to cultural values. It was reported in a study that some individuals would not seek eye care as blindness was culturally believed an inevitable consequence of aging that cannot be reversed.⁷ The category of the pupils' whose guardians preferred not to seek treatment for the pupils' ocular conditions might end up blind from treatable blinding eye diseases. The guardians needed to have ocular health education.

Though the number of the guardians who used 'unconventional means' to manage the pupils' ocular conditions might not be substantial however, they constituted an important group because their 'negative'

attitudes and 'incorrect' practices could have far reaching implications on children ocular health. The 'negative' attitudes and 'incorrect' practices needed to be positively influenced in order to save the 'tender' eyes of school pupils from likely hazards.

Concluding, most of the guardians had correct perception and attitude towards pupils' ocular health. However, message enlightening the public on children eye health should emphasise possible eye health hazards from guardians' 'negative' attitudes and practices. The 'positive' attitudes and 'correct' practices also should be reinforced. General improvement in guardians' earnings can translate to better health care choices.

Acknowledgement

We are very grateful to the Kwara State Universal Basic Education Board, the school teachers, the school pupils and respondent guardians for their specific roles during the survey.

References

1. Murray M. D. D. Global initiative for the elimination of avoidable blindness –VISION 2020: The Right to Sight. *Community Eye Health Journal* 1999; **12**: 32.
2. Gilbert C., Foster A. Childhood blindness in the context of VISION 2020 –The Right to Sight. *Bulletin of the World Health Organization* vol 79 no3.
3. Ezegwui I. R., Umeh R. E., Ezepue U. F. Causes of childhood blindness: result from school for the blind in south eastern Nigeria. *Br J Ophthalmol* 2003; **87**: 20–23.
4. Ajaiyeoba A. I., Scott S. C. O. Risk factors associated with eye diseases in Ibadan, Nigeria. *African Journal of Biomedical Research* 2002; **5**: 1–3.
5. Nirmalan P. K., Katz J., Robin A. L., Krishnadas R., Ramakrishnan R, Thulasiraj RD, Tielsch J. Utilisation of eye care services in rural south India: the Aravind Comprehensive Eye Survey. *Br J Ophthalmol* 2004; **88**: 1237–41.
6. Gyasi M. E., Amoaku W. M. K., Asamany D. K. Barriers to Cataract Surgical Uptake in the Upper East Region of Ghana. *Ghana Med Journal* 2007; **41**:167–170.
7. Chang M. A., Condon N. G., Baker S. K., Bloem M. W., Savage H., Sommer A. The surgical management of cataract: barriers, best practices, and outcomes. *International Ophthalmology* 2008; **28**: 247–260.
8. Ntim-Amponsah C. T., Amoaku W. M. K., Ofosu-Amaah S. Alternate Eye Care Services in a Ghanaian District. *Ghana Med Journal* 2005; **39**: 19–23.
9. Sil A. K. Primary prevention of red eye in the Indian context. *Community Eye Health Journal* 2005; **18**: 57–58.
10. Donogue M. People Who Don't Use Eye Services: 'Making Invisible Visible'. *Community Eye Health Journal* 1999; **12**: 36–38.
11. Ugochukwu C. I. O. Survey of eye health status of primary school children in Nkanu West Local Government Area of Enugu State, Nigeria. Dissertation for the award of Fellowship Diploma of the National Postgraduate Medical College of Nigeria in Ophthalmology, 2002.
12. Chirambo M. C., Ben-Ezra D. Causes of blindness in a

- developing country. *Br J Ophthalmol* 1976; **60**: 665–668.
13. Morgan R. E. Pattern of eye diseases in children seen at Jos University Teaching Hospital. Dissertation for the award of Fellowship Diploma of the National Postgraduate Medical College of Nigeria in Ophthalmology, 1995.
14. Yorston D. Measles and childhood blindness. *Community Eye Health Journal* 1991; **8**: 2–4.
15. Osahon A. I. Consequences of traditional eye medication in UBTH, Benin City. *Nigerian Journal of Ophthalmology* 1995; **3**: 39 – 41.
16. Ayanniyi A. A., Olatunji F. O., Mahmoud A. O., Ayanniyi R. O. Clinical findings among Nigerian paediatric glaucoma suspects during a school eye health survey. *The Open Ophthalmology Journal* 2008; **2**: 137–140.
17. Araoye M. O. Research methodology with statistics for health and social science. Ilorin. Nathadex Publishers, 2003; 117–118.
18. Isawumi M. A. Ocular disorders among school children in Osun State, Nigeria. Dissertation for the award of Fellowship Diploma of the National Postgraduate Medical College of Nigeria in Ophthalmology, 2003.
19. Balogun B. G. Vision Screening among primary school children in the Mainland Local Government Area of Lagos State. Dissertation for the award of Fellowship Diploma of the National Postgraduate Medical College of Nigeria in Ophthalmology, 1999.
20. Onyekwe L. O. Visual impairment among school children in Jos, Plateau State, Nigeria. Dissertation for the award of Fellowship Diploma of the National Postgraduate Medical College of Nigeria in Ophthalmology, 1995.
21. Yoloye M. O. Pattern of visual defects and eye disease among primary school children in Ibadan. Dissertation for the award of a Fellowship Diploma of the National Postgraduate Medical College in Ophthalmology, 1993; 70–91.
22. Courtright P., Chirambo M., Lewallen S., Harjinder C., Kanjaloti S. Collaboration with African traditional healers for the prevention of blindness. Singapore: World Scientific Publication Co. Pte. Ltd.; 2000.
23. Omolase C. O., Fadamiro C. O., Omolase B. O., Adido J., Adepoju F. G. Barriers to uptake of orthodox eye care in a rural Nigerian community. *Tropical Journal of Health Sciences* 2007; **14**: 23–25.
24. Ayanniyi A. A. A 39-year-old man with blindness following the application of raw cassava extract to the eyes. *Digital Journal of Ophthalmology* 2009; **15(2)**: 1–4.
25. Paczka J. A., Ochoa-Tabares J. C., Giorgi-Sandoval L. A., Topete-Jiménez J., Sánchez-Castellanos V. E., Jáuregui-García DG, Vázquez-Martínez L. Knowledge and perceptions of glaucoma among adults living in an urban area. *Gac Med Mex* 2006; **142**: 303–8.
26. Nirmalan P. K., Sheeladevi S., Tamilselvi V., Victor A. C., Vijayalakshmi P., Rahmathullah L. Perceptions of eye diseases and eye care needs of children among parents in rural south India: the Kariapatti pediatric Eye Evaluation Project (KEEP). *Indian J Ophthalmol* 2004; **52**: 163–7.
27. Dandona R., Dandona L., John R. K., McCarty C. A., Rao G. N. Awareness of eye diseases in an urban population in southern India. *Bull World Health Organ.* 2001; **79**: 96–102.
28. Sannapaneni K., Vilas K., Marmamula S., Bindiganavale S. R., Gullapalli R. N., Ravi T. Awareness of glaucoma in the rural population of Southern India. *Community Ophthalmology* 2005; **53**: 205–208.
29. Yun L. S., Hassan Y., Aziz N. A., Awaisu A., Ghazali R. A comparison of knowledge of diabetes mellitus between patients with diabetes and healthy adults: a survey from north Malaysia. *Patient Educ Couns* 2007; **69**: 47–54.
30. Al-Shafae M. A., Al-Shukaili S., Rizvi S. G., Al-Farsi Y., Khan M. A., Ganguly S. S., Afifi M., Al-Adawi S. Knowledge and perceptions of diabetes in a semi-urban Omani population. *BMC Public Health* 2008; **8**: 249.
31. Olurin O. National Postgraduate Medical College of Nigeria. Third Faculty of Ophthalmology lecture. Glaucoma Revisited: 18th, August, 2000; 3–8.