

Barriers to Wearing Glasses among Primary School Children in Lagos, Nigeria

FADERIN M. A. AND *AJAIYEoba A. I.

From: Nigerian Army Eye Centre, Bonny Camp, Lagos, Nigeria

*Department of Ophthalmology, University College Hospital, Ibadan, Nigeria.

SUMMARY:

The study was carried out to investigate barriers to uptake of wearing glasses amongst primary school children. A total of 919 pupils from two primary schools (one private school and one public school) were screened. The schools were selected using a stratified random sampling technique. All pupils whose visual acuity was equal to or less than 6/9 were refracted by the optometrist. These pupils were given referral letters inviting their parents to attend the eye clinic with them. The researcher using structured and open-ended questionnaires interviewed the pupils, parents and teachers. Focus group discussions were held with the pupils and teachers. Pupils were more aware of issues surrounding wearing of glasses than their parents. The main constraint preventing children from wearing glasses was the poor economic status of the parents. If glasses were made available to school children at a highly subsidized rate, or better still free, most of the excuses parents gave for not providing glasses for their children or allowing them to wear glasses would not be tenable. For those that genuinely had deep-rooted beliefs against wearing glasses, health education by teaching the benefits of wearing glasses could be of great help. We appeal to private eye care service deliverers to accommodate school children and to offer services to them at affordable costs including provision of glasses. It is recommended that funding for this exercise should be from non-governmental organizations, philanthropists, pharmaceutical companies and well-meaning individuals.

KEY WORDS: *Barriers, wearing glasses, primary school children*

INTRODUCTION

Studies on refractive errors are many but those on barriers to uptake of optical services amongst school children are few all over the world. Yet recommendations from studies on refractive errors may not be meaningful if children with detected refractive errors do not wear glasses for one reason or another.

In Nigeria, there are many studies on refractive errors, but we are not aware of any study that looked into the problems of uptake of optical services amongst children discovered to have refractive errors. Such study is well overdue in Nigeria. This has therefore

stimulated the desire to assess the situation using the primary schools belonging to the Nigerian Army, to emphasize the importance and need to study the barriers to wearing glasses amongst these children in order to ensure maximal utilization of the benefits of detecting refractive errors in the first instance and on time too. One school representative of the private sector and one school representative of the public school sector were included in this survey in order to have better insight as to what the problems might be.

MATERIALS AND METHODS

This was a study to investigate the barriers to

*Author for Correspondence

wearing glasses among primary school children with refractive errors attending two Army children schools at Bonny camp, Lagos between March and June 2000.

Stratified random method was used in selecting children in 2 schools out of 5 Command and 28 Army Children Schools in Lagos State.

Definition of Refractive error

Refractive error was defined for this study as visual acuity of less than 6/9. Or any visual acuity correctable with minimum of plus or minus 1.0 dioptre sphere, with or without minimum of plus or minus 0.5 dioptre cylinder to normal (6/5) vision.

Description of subjects

The subjects enrolled for the study were primary school children attending the command children school (school A), and the Army Children School (school B), Bonny Camp, Victoria Island, Lagos.

The sample size was calculated using an estimated prevalence of 8%^{5,6}, desired precision of 2% and a desired effect of 1. These figures were used in the calculation of sample size because most studies on refractive errors in Nigerian children estimates its prevalence at around 8%. A design effect of 1 is acceptable in studies where cluster sampling has not been done and precision of 2% yielded sample size, which was affordable within the limits of resources available for conduct of the study. Sample size for school A was 550 and for school B was 450. Informed consent was secured from the parents of all children selected for the study through letters sent to their parents, before they were finally included in the study. Ethical approval for the study was obtained from the ethical committee of the Lagos State Health Management Board.

There were two teams for the study each made up of one enumerator, one ophthalmic nurse and one optometrist. The instruments utilized in the study were the Snellen E chart, retinoscope, ophthalmoscope, pen torch, and a tape measure. The team underwent five days training to standardize the study procedure. A pilot study was carried out in the center on all primary school children that attended our eye clinic prior to the study proper.

Visual acuity of selected pupils was done by the ophthalmic nurse. Pupils with visual acuity less than 6/9 had refraction done by the optometrist. All the pupils with refractive errors, their parents and teachers and were interviewed by the authors using a set of structured and open-ended questionnaire. The authors

also held focus group discussions with pupils, parents and teachers. Series of more probing questions were used which were initiated by the authors as the discussion progressed. The groups did not have the same questions as the groups were allowed to discuss freely on the topics. Due to the poor response of parents, home visits were made to enable the authors to interview the parents. Interviews, using structured and open-ended questionnaires were conducted to a large extent by the authors except when there were home visits in which one of the ophthalmic nurses assisted, which yielded additional valuable information. The data was entered into the database of the software package designed for collection, analysis, and reporting (EPI info version 6) after the completion of the study. There were internal checks within the database programmed to identify and subsequently correct errors in data entry. Some of the qualitative data obtained from the questionnaire and by one to one interview were analyzed using descriptive methods (e.g. frequency tables). All the information collected during the focus group discussion was transcribed from the tape, and analyzed using the framework approach of data analysis of qualitative research.

RESULTS

A total of 919 pupils were screened for refractive error, out of whom, only 160 improved with refraction. These comprised of 105 from school A and 55 from school B. These 160 pupils comprised of 70 boys (44%) and 90 girls (56%) with a male to female ratio of 1:1.25. More girls presented with refractive errors than boys. Out of these 160, 37 pupils (23.1%) and 86 pupils (53.8%) had uncorrected visual acuity of 6/6 and 6/9 respectively. However, 30 of these pupils with 6/6 and 6/9 vision, fulfilled the inclusion criteria of having refractive errors that is at least + or - 1.0D sphere, or + or - 0.50D cylinder or both. Only 37 pupils (23.1%) had visual acuity of less than 6/9, e.g. 6/12 and below. Therefore overall, 67 pupils who had refractive errors, 48 pupils were from schools A and 19 pupils were from school B. Refractive errors were common in children aged 6 to 11 years. Age distribution in different types of refractive errors is shown in Figure 1. Parents' response was very poor in general. Reliable response for socio-economic class could be obtained from parents of 64 pupils with refractive error. The socio-economic class of parents of pupils with refractive errors is shown in Table 1. Parents of 42 pupils (73%) were from low socio-

economic class while the other parents of 17 pupils (27%) were from the upper socio-economic class.

Majority of children with refractive errors did not realize that they could see better. The few that complained were either ignored or told not to “bring bad curses on themselves”; by uneducated parents whose beliefs are that children are made “perfect by God” and are not supposed to have problems with their eyes.

Desire/affinity to wear glasses

Of the 160 pupils interviewed 103 pupils (64.4%) expressed the wish to wear glasses whilst 57 pupils (35.6%) said they would not like to wear glasses. Out of the 67 pupils with refractive errors, 18 pupils (26.9%) said they would not like to wear glasses despite their errors of refraction and 29 pupils or 43.3% who did not have errors of refraction said they would not like to wear glasses. The remaining 20 pupils (29.8%) did not express any preference.

Family history of wearing glasses and parents reaction to children wearing glasses

Those parents that wear glasses or those with family history of wearing glasses would allow their children to wear glasses (Table 2). However 48 (62%) of the parents, even though they wore glasses themselves or someone else in the family did, would only agree to allow their children to wear glasses if the doctor told them there was no alternative treatment available. A large proportion of parents that did not wear glasses, 29 (38%) were also willing to allow their children to wear glasses, provided that wearing glasses was the only solution to the child’s problem. 20 parents (57%) who did not wear glasses would not allow their child to wear them. Nine parents (26%) said they would definitely not allow their children to wear glasses even though they wore glasses themselves.

Parents with previous eye test/wearing glasses and attitude to children wearing glasses

17 parents (22%), who had never had an eye test either because they had no complaints or felt they no need for an eye test would allow their children to wear glasses (Table 3). Interestingly, 17 parents who have had previous eye examination and who wear glasses would not allow their children to wear glasses. When this was probed further, it was revealed that it was more acceptable for them to be “blind” rather than for them to help their children becoming blind by wearing glasses.

Parents wearing glasses and attitude to children wearing glasses

34 parents (44%) of the 77 parents who were willing to wear glasses, 24 parents (31%) that are wearing glasses already, those who would wear glasses at all, 14 (18%), and those that were not sure if they would wear glasses were all willing to allow their children wear glasses (Table 4). Interestingly the parents that were not sure and those wearing already would only allow their children to wear glasses on medical grounds. However some parent who themselves were willing to wear glasses (12 or 33%) and those wearing glasses already (7 or 31%), would definitely not allow their children to wear glasses. There was a group of parents 16 (47%) who would not wear glasses and would not allow their children to wear glasses under any circumstances.

Cost of glasses

Most of the parents expressed the opinion that glasses are too expensive and they cannot afford to pay for them. “Glasses are a luxury, very expensive. I can barely feed the family and you’re talking of spending the little money I have on something that I’m not sure will cure the child’s problem”. “They cannot take care of themselves not to think of them taking care of glasses”. “I’ve bought about two sets of glasses for my son, and instead of the eye getting better, it is getting worse as the power of the glasses gets bigger every time”.

Focus group discussion

The following were some of the key themes from the focus group discussions:

1. Glasses are for old people and not for children; children below 15 years old should not wear glasses (teachers and some parents expressed their views during the interview).
2. Wearing glasses cause eye problems; it makes the eyes go inside: (pupils and teachers) “Glasses destroy the eyes”. “You start with thin lenses and after a few years the lenses look like bottles”. “The more you wear glasses the worse the eyes become”.
3. Wearing glasses is good; it makes the individual more attractive (Pupils and teachers). “Glasses help you to see better especially to read”. “It is good to wear glasses as it protects the eyes from the sun; it also protects the eye from television as the light from the television damages the eyes.” “Glasses adds to someone’s ego; it completes the dressing; makes you look more dignified and

beautiful, just like you doctor.”

4. People that wear glasses are more intelligent; (pupils) “My friend that wears glasses is very intelligent; before she started to wear them she was not as bright. I’d like to wear glasses so that I can be like her”. “You doctor, you wear glasses and you are intelligent and most doctors, engineer, lawyers and those in important offices all wear glasses.” The other pupils agreed that although people that wear glasses are intelligent, they do not think it is the glasses that make to be so rather they wear glasses because of too much reading.
5. Glasses are for correction of eye problem, especially in old people who cannot see or read well (teachers). “Since I started to wear glasses I found I could see better.” “One of the pupils in my class that I thought was a good pupil, since he got his glasses he became a different person”. “I have three sisters and two brothers, all wearing glasses. Three of my kids need glasses but I can only afford to buy for the eldest. Please try to do something about the cost so that we ordinary people can afford it.”

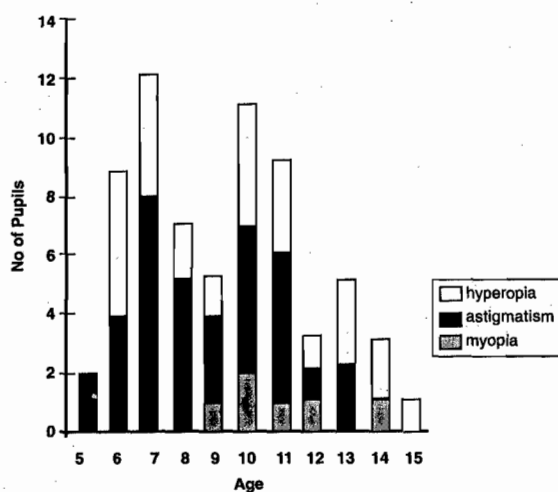


Figure 1: Age Distribution in the various types of refractive errors

Table 1. Socio-economic status of 64 parents of pupils with refractive errors

Any Error	Occupation of Parents				
	Professionals	Medium Income	Non-Comm. Artisans	Non Skilled	Others
Error	8	9	23	19	5
No Error	1	11	24	41	7
Total	9	20	47	60	12

Table 2. Family history of wearing glasses and allowing children to wear glasses

Wear glasses in family	Will you allow child to wear glasses?			Total
	Yes (%)	No (%)	May be (%)	
Parents	38 (49.3)	9 (25.7)	1	48 (42.5)
Siblings	6 (7.8)	5 (14.3)	0	11 (9.7)
Grandparents	2 (2.6)	0	0	2 (1.8)
Others	2 (2.6)	1 (2.9)	0	3 (2.7)
No one	29 (37.7)	20 (57.1)	0	49 (43.3)
Total	77 (100)	35 (100)	1	113 (100)

Table 3. Parents with previous eye test/wearing glasses and allowing their children to wear glasses

Ever had an eye test?	Will you allow your child to wear glasses?			Total (%)
	Yes (%)	No (%)	Maybe (%)	
Yes	25 (32.5)	8 (22.8)	1	34 (30.1)
Yes and wear glasses	35 (45.5)	17 (48.6)	0	52 (46.1)
No	4 (5.2)	1 (2.9)	0	5 (4.4)
Have no cause	13 (16.8)	9 (25.7)	0	22 (19.4)
Total	77 (100)	35 (100)	1	113 (100)

Table 4. Parents wearing glasses and attitude to children wearing glasses

Will you wear Glasses	Will you allow your child to wear glasses			Total (%)
	Yes (%)	No (%)	Maybe (%)	
Yes	34 (44.1)	12 (34.3)	1	47 (41.6)
No	14 (18.2)	16 (45.7)	0	30 (26.5)
May be	5 (6.5)	0	0	5 (4.4)
Wear already	24 (31.2)	7 (20)	0	31 (27.5)
Total	77 (100)	35 (100)	1	113 (100)

DISCUSSION

Very little work had been done on barriers to wearing glasses in children and to the best of our knowledge no such work had been done so far in

Nigeria. However, in related studies on the same group of children in Nigeria, while some authors¹ noted uncorrected refractive errors as responsible for visual defect, they attributed this to the cost of procurement of spectacle glasses. This notion was corroborated by our study as most of the parents of pupils with refractive errors were from low socio-economic class and volunteered this information. Other authors^{2,3,4} working in more indigenous populations in Nigeria, attributed the barriers to wearing glasses to taboos, customs and cultural beliefs.

The few studies which have been carried out by Yawn et al⁵ and Hayley et al⁶, focused mainly on parental reasons for not following-up on referrals and these reasons were complex. Some of the barriers identified were related to the income status of families in which it was noticed that those parents with low income were less likely to seek care for their child. Lack of awareness about eye test, potential effect of refractive errors in children, parental perception of inadequate communication between schools and the parents, high cost of glasses and in some cases the reluctance on the part of the children especially the adolescents to wear glasses were some of the reasons given for non follow-up at referrals appointment. The difference between this study and other studies was that not only the parents were interviewed, but the pupils and their teachers were also interviewed. In addition focus discussions were held with the pupils and their teachers.

The results of this study showed that there was greater awareness concerning eye problems and wearing of glasses among the pupils than the parents interviewed. One pupil said that when she showed the prescription for glasses to her father, she was ignored, and when she persisted the father told her: "you claim you need glasses to see; by the time I give a good slap your eyes will open and you will see". After that she was afraid to go back to him even though she realized her schoolwork was being affected.

Very few of the parents with high socio-economic status attended the clinic with their children and the main excuses given was not having the time due to their busy schedule as found also by Hayley et al². Most of the parents, because of financial implications came up with a variety of reasons why they believe their children should not wear glasses. When told that the glasses would be given at very subsidized rate, the objections were minimized. Interestingly, some of them genuinely believe children should not wear

glasses on religious or some other deep-rooted beliefs. (That if God wanted us to wear glasses he would have created us as such. Other belief is that glasses are artificial things and they are not supposed to put anything as such. Also that glasses instead of making the eyes get better in worsens them).

Some parents even though they wore glasses and realized the improvement this made to their vision still believe that children should not wear glasses until they are old enough to take proper care of the glasses. In a refractive error study in children in China, even though obstacles/barriers to obtaining glasses for the children were not studied it was indicated that lack of awareness and cost might be implicated⁷.

REFERENCES

1. Balogun M. Refractive errors in primary school children in Lagos mainland. Dissertation submitted to the National Postgraduate Medical College of Nigeria for the award of Fellowship diploma in Ophthalmology 1999.
2. Yoloye M. O. Pattern of visual defect and eye diseases among primary school children in Ibadan, Nigeria. Dissertation submitted to the National Postgraduate Medical College of Nigeria for the award of Fellowship diploma in Ophthalmology 1991.
3. Abiose A., Bhar I. S., Allanson M. A. Ocular health status of post-primary school children in Kaduna, Nigeria. Report of a survey. *J Paediatr Ophthal & Strab* 1980; 17: 337 – 340.
4. Onyekwe L. O., Ajaiyeoba A. L., Malu K. N. Visual impairment amongst primary school children and adolescents on the Jos Plateau State of Nigeria. *Nig. J Ophthalmol* 1988; 6 (1): 1 – 5.
5. Yawn B. P., Kurland M., Butterfield L., Johnson B. Barriers to seeking care following school vision in Rochester, Minnesota. *J Sch Health* 1998; 68 (8): 319 – 24.
6. Hayley M., Tami M.: School based vision screening: Parental reasons for non-response following a referral. *Health Services Application*.
7. Pockharel G. P., Negrel A. D., Munoz S. R., Ellwein L. B.: Refractive error study in children: results from Mechi zone, Nepal. *Am J Ophthalmol* 2000; 129: 436 – 44.