

Assessment of Children with Visual Problems and Challenges that Hinder Them from Being Identified in Selected Primary Schools, Central Kenya

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Abstract

Visual impairments have been known to affect academic performance among learners as well as their quality of life. Identification of early signs of visual impairments/visual problems is pivotal in arresting future visual impairments. Most often, children with visual problems remain undetected and unsupported. The purpose of this study was to examine school children with visual problems and to investigate the challenges that the teachers faced in identifying them. A survey study was carried out in 12 public primary schools in Central Kenya. The participants included 240 school children and 24 class teachers. The instruments for data collection were self constructed visual problem identification checklists, Snellen Chart and teacher interview schedules. Data were analyzed using descriptive and inferential statistics. Results indicated that some children showed early signs of visual impairments and various challenges hindered teachers from identifying children with visual problems such as lack of training in special needs education.

KEYWORDS: Visual problems, Visual loss, Visual acuity, School Children

Introduction

Globally, about 285 million people have visual impairment although 80% of the visual impairment is preventable or treatable (WHO, 2012). WHO (2009) has predicted that the number of people who have visual impairments worldwide will escalate to 360 million by 2020 unless elaborate intervention measures are undertaken to reverse the trend. According to the report, in Africa, there are 35 million people with visual impairments even though it represents only 11% of the global population. Every year, an estimated 2000 children across Africa develop visual impairments (WHO, 2005). In Kenya, the census statistics of 2009 indicated that the population of people with disabilities in the country was about 1.3 million, with 25% having visual impairments (Government of Kenya, 2010).

The major challenge in preventing visual loss in Africa is mainly delayed detection (Ira, 2008). Other factors include lack of awareness about visual problems and their potential effects at personal, family, school as well as community level; non-availability of and/or inability to afford services for testing, and misconceptions about visual problems (Barbara, 2010). The International Council for Education of People

with Visual Impairments (ICEVI, 2005) has showed that millions of school children remain at risk of visual loss due to under-identification. To counter this, visual screening programmes have been recommended as a prerequisite towards prevention of visual loss in children [ICEVI (2010), American Academy of Ophthalmology (2007), Kingo & Ndawi (2009), Sight Savers International (2005)]. Since visual cues are key to how children learn and function, vision problems can affect all aspects of a child's development by potentially limiting the range and types of information and experiences the child processes (Vaughn, Maples & Hoenes, 2006). Studies have documented that early identification of visual problems decreases the risk of visual impairments (Marshal, Meetz & Harmon, 2007; Roch-Levecq, Brody & Thomas, 2008).

Kenya has a population of 9.4 million children in primary schools (GoK, 2010). Despite this high enrolment, identification of school children with visual problems has remained a major challenge due to factors cited earlier. Thomson (2005) and (Bailey, Indian, Zhang, Geiss, Duenas & Saaddine, 2006) have noted that early detection of children with vision problems pose major challenges to educators because often, signs of vision problems are not discovered until children have suffered through many years of poor school performance, repeated discipline problems and feelings of poor self-worth. The special education teachers who can be instrumental in spearheading identification of early visual impairments among children in primary schools are inadequate. This lack of specialized training among teachers coupled with lack of visual screening programs in schools may delay identification of children with visual impairments (Mwangi, 2009).

Materials and Methods

A survey study was conducted in 12 public municipality schools selected from Nyeri, Kirinyaga, Murang'a and Kiambu counties in Central Kenya. From each county, four schools were randomly selected. From each school, 20 children (10 from class 2 and 10 from class 3) and their class teachers were selected. The study sample comprised of 240 school children and 24 class teachers.

The survey gathered data on three main areas: Visual problems exhibited by school children, teacher demographics, factors hindering early identification of children with visual problems. The instruments used to gather relevant data included self constructed visual problem identification checklists, Snellen Charts and interview schedules for teachers. The instruments were given to experts in the field of special education to ensure face and content validity. The visual problem identification checklist comprised 12 statements describing early signs of visual loss/ visual problems. As shown in Table 1, each statement was rated in a three point likert scale (Never, Sometimes and Often) depending on how often it occurred. The reliability of the visual problem checklist was established using the split- half method and reliability coefficient of 0.88 was obtained. The standard Snellen Chart was used to measure the visual acuity of both eyes, each at a time, so as to determine the extent of visual loss. Visual Acuity measurements ranged from 6/6 to 6/60. In this study, visual acuity equal to or greater than 6/12 was considered to be impaired vision (Hartman, 2001). Semi- structured interviews were administered to the teachers and had two sections. The first section gathered data on whether the teachers had received any special education training, and their areas of specialization. The second

section looked at factors that hindered identification of children with early signs of visual impairments.

Statistical Package for Social Sciences (SPSS) version 18.0 for windows (SPSS Inc. Chicago, IL, 2008) was used for analysis of quantitative data from visual problem checklists and Visual acuity measurements which generated counts and percentages in form of tables and graphs. The counts and percentages were descriptively analyzed. The qualitative data from the interview schedules were put in two themes: special education training and area of specialization and factors that hindered identification of children with early signs of visual impairments. The themes enhanced understanding of the issues under study and were descriptively analyzed through narrative passages.

Results

Special Education Training and Specialization

Respondents were asked whether they had undertaken any special education training and their areas of specialization. Ninety two percent (n=22) had no special education training and only 8% (n=2) had trained in special education with a specialization in visual impairments. Based on these findings, majority of the teachers had not trained in special education.

Visual Problems Exhibited by Children

Early signs of visual impairments (visual problems) that were investigated in this study included stumbling on objects when walking, holding book too close when reading/ close one eye when reading, omission of letters and words when reading, frequent blinking of eyes, follows line with finger when reading, unwillingness to engage in reading tasks, tendency to move near or away from light, difficulty reading from chalkboard, screwing up face or frown when trying to see and moving head when reading instead of the eyes. This study considered the presence of visual problem only if it occurred 'often' as shown in Table 1. The findings of this study showed that the major visual problems exhibited included unwillingness to engage in reading tasks (37%), following line with fingers when reading (35%), difficulty reading from chalkboard (33%) and holding book closely/ closing one eye when reading (30%). The survey revealed that the respondents showed early signs of visual loss.

Table 1: Visual Problems exhibited

Early signs of visual Impairment/ Visual Problems	N= 240	
	N	%
Stumbling on objects when walking	6	14
Holds book too close when reading/ close one eye when reading	71	30
Omission of letters and words when reading	59	24
Frequent blinking of eyes	61	26
Follows line with finger when reading	86	35
Unwillingness to engage in reading tasks	89	37
Tendency to move near or away from light	60	25
Difficulty reading from chalkboard	79	33
Screwing up face or frown when trying to see	48	20
Moving head when reading instead of the eyes	56	23
Complaining of blurred vision or double vision when reading	39	16
Complaining of eye strain or headaches when reading	46	19

This study also investigated the extent of visual loss in children using the Snellen Chart. The study considered visual loss/ impaired vision when the Visual Acuity (VA) value achieved using the Snellen chart was lower or equal to 6/12 in either one or both eyes as shown in Table 2. The respondents who showed VA equal to or lower than 6/12 comprised 9% (n=21). Among these, 3 (1%) respondents had significant visual loss with a visual acuity of 6/6 in one eye.

Table 2: Visual Acuity of 6/12 or Worse in One or Both Eyes

Right Eye	Left Eye	N (%)
6/6	6/18	1(.4%)
6/9	6/12	2(.8%)
6/9	6/18	3(1.3%)
6/12	6/9	2(.8%)
6/12	6/12	2(.8%)
6/12	6/18	2(.8%)
6/18	6/9	1(.4%)
6/18	6/12	1(.4%)
6/18	6/18	4(1.6%)
6/18	6/60	1(.4%)
6/60	6/9	1(.4%)
6/60	6/18	1(.4%)
TOTAL	—	21(9%)

Factors hindering early identification of children with visual Problems

Respondents reported various factors that hindered early identification of children with visual problems. Thirty eight percent (n=9) pointed out lack of relevant knowledge and skills about visual problems. Twenty five percent (n=6) mentioned lack of skilled personnel to help in identifying children with visual problems. Seventeen percent (n=4) indicated lack of openness on the part of school children in disclosing their visual difficulties while 20% (n=5) complained of large classes which minimized face to face contacts with children so as to notice any visual difficulties.

Discussion

Early identification of children with visual problems should occur as early as possible to avoid delay, which lowers the chances of recovery and correction and impacts on school outcomes. This study investigated visual problems exhibited by school children, training of special education teachers and factors that hindered early identification of school children with visual problems. Information gathered provided insight in identifying appropriate measures that can help in detecting early signs of visual impairment in children.

Special Education Training and Specialization

The teachers were asked whether they had been trained in special education and their area of specialization. The results of the study showed that 92% (n=22) of the respondents had no special education training and only 8% (n=2) had trained in special education with a specialization in visual impairments. Contrary to these findings, a study done in Uganda (Steve, Ben & Cathrine, 2005) using the same methodology indicated that more than 80% of the teachers had been trained in visual impairments although the study was conducted in schools with children with visual impairments.

The findings of the study were a clear indication that the public schools lacked special education teachers with relevant qualifications to detect early signs of visual impairment in children. Knowledge and skills in the field of visual impairments enhance accurate identification of early signs of visual impairments (Wendy, 2003; Groffman, 2006 & Flax, 2006). Majority of the teachers lacked background knowledge about visual impairments, hence, likely to face challenges in identifying children with early signs of visual impairments (Yalo & Indoshi, 2010).

Visual problems exhibited by school children

The study findings revealed that some children in public primary schools showed signs of early visual impairments. The major visual problems exhibited included unwillingness to engage in reading tasks (37%), following line with fingers when reading (35%), difficulty reading from chalkboard (33%) and holding book closely/closing one eye when reading (30%). These findings were similar to a study conducted by Adegbehingbe (2005) that found out that undiagnosed visual problems in public schools accounted for 13.5%.

In the present study, 9% of respondents had visual acuity of 6/12 or worse in one or both eyes. The results were in agreement with those of a similar study involving 5913 school children (Mohammed (2009) which revealed that (9.32%) of the respondents had visual acuity of 6/12 or worse in at least one eye. Similarly, an Iranian study of 215 respondents found that 18 (8.4%) recorded a visual acuity of 6/12 or worse in at least one eye (National Commission on Vision and health, 2012). These studies support early identification of visual problems. During the study, it was revealed that none of the public primary schools under study performed visual screenings on children.

Factors hindering early identification of children with visual problems

The major factor that hindered identification of children with visual problems was lack of relevant knowledge and skills among the teachers. KIE (2010) offered some possible reasons why this was the case which included continuous capacity

development of teachers in public schools either being haphazard or lacking; in-service training of teachers was hampered by irregular and unscheduled training, inadequate time and prohibitive costs of training. Other factors hindering early identification of children with visual problems included lack of skilled personnel to help in identifying children with visual problems, lack of openness on the part of school children in disclosing their visual difficulties and large classes which minimized face to face contacts between teachers and children thus unable to notice any visual difficulties.

Conclusion

This study investigated children with visual problems and the challenges of identifying them. It was established that there were children who exhibited early signs of visual impairments in public primary schools. This means that these children remain undetected and continue suffering without their needs being met. The study also established that the schools did not perform routine visual screening for children which contributed to lack of early identification of those at risk. Therefore, there is dire need for the Ministry of Education (MoE) in Kenya to introduce visual screening programs in primary schools to enhance early identification of children with visual problems for timely interventions.

In practice, teachers ought to have good working knowledge about visual impairments if they are to positively identify children with early signs of visual impairment. However, findings showed that teachers lacked knowledge and skills about visual impairments. Such teachers are unlikely able to identify children with early signs of visual impairment. To counter this, MoE in Kenya ought to organize special education in-service seminars and workshops to equip the teachers with relevant special education knowledge and skills.

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