The Prevalence of Uncorrected Refractive Error in school aged children in Nakuru County in KENYA

Evidence from the School Eye Health Screening campaign 2020

80%

of classroom learning occurs visually

THE IMPORTANCE OF SCHOOL EYE HEALTH SCREENING

80% of classroom learning occurs visually**.** Children with poor vision are at a major disadvantage at school. Good eye health is essential for child's education, socio-emotional development and health.

Implementing school eye health screening programs is one of the most cost-effective solutions to ensure children access primary eye care. Providing spectacles to children in need has positive impact on their education outcomes.

Unlocking children's full potential contributes to the Sustainable Development Goals. Improved education (SDG4) helps reducing poverty and hunger and enable work (SDGs 1,2,8).

ABOUT THE PROGRAM

The "**MACHO BORA ELIMU BORA**" school screening program is an ESSILOR initiative, supported by the ESSILOR Vision for Life™ social impact fund. The program is approved by the County Government of Nakuru, the Department of Health Services and the County Education Office.

The "MACHO BORA ELIMU BORA" inclusive model focuses on the underserved areas of Nakuru County, creating access for the primary vision care services in schools and **raising awareness** among **teachers** and **communities** (enrolling **parents** into the process), ensuring **visual tests**, **optometric refractions**, **referrals** and **provision of affordable quality spectacles.**

ABOUT THE RESEARCH

The purpose of the research is to assess and quantify the prevalence of Uncorrected Refractive Error (URE) among school-aged children and build evidence for the County and stakeholders.

The research is sponsored and performed by the Vision Impact Institute, a global non-profit organization committed to building evidence and raising awareness about the importance of vision correction and protection.

Method

The research analyzes outputs from the screening campaign run in Jan-Feb 2020. The sample enrolls **16,000+** pupils and students, **aged 5-20 years**, from **72 schools** (46 Primary and 26 Secondary) in **10 sub-counties** in Nakuru County.

The research utilizes an anonymized and quality controlled data assessment. The Mean Spherical Equivalent (MSE) method is applied to qualify required visual corrections per age, gender, type of visual disorder and its degree. Limitations: as the international guidelines for the massive school eye health screening programs in low and middle-income countries do not require cycloplegic refraction, the evidenced prevalence of URE, especially hyperopia, can be underestimated.

KEY FINDINGS

The research based on the Macho Bora Elimu Bora program provides **evidence on the significant level of Uncorrected Refractive Error (URE)** among school populations in Nakuru Country. It quantifies visual needs and requirements for vision correction.

1 in 6

children require vision correction

1 IN 6 CHILDREN REQUIRE VISION CORRECTION

The prevalence of URE in the overall research sample is 16%

The prevalence of URE shows inequalities per gender and age

- URE is higher among Girls (**18%)** than Boys (**13%)**
- URE is higher in secondary (**22%**) than primary schools (**13%)**

The prevalence of MYOPIA in the overall research sample is 5,2%

- Myopia rate is higher in secondary (**7,6%**) than primary schools (**4,2%)**
- Myopia degree worsen with child's age, which may cause further health problems

98%

of children who need visual correction do not have spectacles

98% OF CHILDREN WHO NEED VISUAL CORRECTION DO NOT HAVE SPECTACLES

The actual coverage of spectacles is very weak and inefficient

- Only 2% of pupils/students who needed spectacles actually owned them
- Of those who had spectacles, almost all required a renewed prescription

2,500+ SPECTACLES PRESCRIBED

Of 2,562 children who were prescribed with corrective spectacles:

- 1 in 3 (33%) were myopic
- 1 in 2 (50%) were qualified at potential risk of developing myopia
- 1 in 6 (17%) were hyperopic
- 2 in 3 (70%) were astigmatic, in combination to myopia and/or hyperopia

The campaign not only delivered the prescriptions for affordable spectacles but also identified non-refractive eye conditions (keratoconus, asthenopia, allergic conjunctivitis, etc.) and referred children who needed further care and treatments to the eye hospitals.

CONCLUSION

Uncorrected Refractive Error (URE) is a major public health issue. The magnitude of URE in schools is significant and calls for reinforced policies and interventions, especially in the underserved areas of Kenya. Addressing URE and Myopia is essential for enabling Kenyan school children to see and to learn better, unlocking their potential for the future.