Title: **Prevalence and pattern of significant refractive errors in high school students in Meru municipality**

Author: Njeru, Samuel N.

Abstract: Uncorrected refractive errors are an important cause of visual impairment in many. Visually disabling refractive error affects a significant proportion of both genders of the global population. Lack of practitioners is the main reason for high rates of visual problem due to uncorrected refractive errors. In developing countries, it is difficult to provide refractive services mainly due to lack of sufficient data on these errors. The proportion of school children who are visually impaired due to refractive errors can be used to assess the level at which the development of refractive services for schools can be established in a country or region. The main objective of this study was to investigate prevalence, pattern and some of the factors for continued presence of uncorrected significant refractive errors (SRE) among high school students in Meru Municipality, Meru Central District of Eastern Province, Kenya. This was a cross-sectional study that was conducted in two selected secondary schools. Stratified random sampling technique was used to select the study population. Data was collected through structured questionnaires and physical examination of the study subjects who met the eligibility criteria. Chi square test of independence was used to determine the relationship between variables such as prevalence, pattern, refractive status, health seeking behaviour and their association with the sex of the study subjects. The number of students who participated in the study was 164 with boys and girls having equal representation. The participants were between 13 to 18 years old, with a mean of 15.4 years. The study showed that the overall prevalence of SRE was 8.5% (n=164). Sex specific prevalence indicated no significant difference between the two sexes c2 = 1. 24, d.f =1 p> 0.05). The pattern of SRE revealed that myopia was the leading cause of decreased visual acuity, contributing 6.7% of all the students who underwent the screening process. All boys with SIZE were myopic, compared to 66.6% for girls. However, there was no significant difference between them (c2 =2.05, d.f =1 p>0.005). Astigmatism was second with 1.1% prevalence and lastly, hypermetropia with 0.6%. The study has shown poor health seeking behaviour by students, with 78.6 % (n=14) having not sought correction of their visual problem. About 7.1% of students with SIZE had spectacle correction with correct power of lenses while 14.2% (n=14) had spectacles with wrong lens power. The main reason for students with SRE not wearing glasses was inaccessibility to refractive services, with 52.6% of them having never been examined for their refractive state. SRE among students was also associated with family history of wearing spectacles. In conclusion, SRE among high school students in Meru Municipality require attention, with myopia being the main problem. Screening programmes for refractive services through primary health care can offer a reasonable solution to the problem and is therefore highly recommended. Multisectoral approach between stakeholders in the ministries of Health and Education can yield meaningful output in alleviating the situation.