

Commentary on: "Tribal Odisha Eye Disease Study # 4: Accuracy and utility of photorefractive error correction in tribal Odisha (India) school screening"

Uncorrected refractive error is the most common cause of amblyopia and avoidable blindness in children. Low vision due to refractive error is detrimental for both psychological and physical development of kids. Timely screening of refractive error is of paramount importance especially in developing countries like India, where many children go undiagnosed due to lack of awareness and timely screening. The estimated prevalence of amblyopia worldwide is about 2%–5%.^[1] Underlying amblyogenic causes as reported in a study from South India were ametropia (50%), anisometropia (40.9%), strabismus (6.8%), visual deprivation (4.5%), and combined causes (2.2%).^[1,2] Of all the causes of ametropia, astigmatism takes the lead followed by hypermetropia and least in myopia.^[3]

There are different ways of screening for amblyopia risk factors; one such way is photoscreening. Various photoscreeners such as plusoptiX, SureSight autorefractor,^[4] PediaVision SPOT, and 2WIN have been studied in previous literature. SPOT, 2WIN, and plusoptiX were compared and found to have similar level of sensitivity and specificity. These devices were used for screening of children with age range of < 1 year to 17 years and found to have a sensitivity of around 90% and specificity of around 80%. Advantage of such devices over comprehensive eye examination is ease of use, good screening ability, portability, fast accusation of data, and simple format of reporting/referral. They can be used in community outreach activities, school screening programs, and high-volume centers.

TOES report # 4 showed a good correlation and agreement between Spot Vision Screener and subjective refraction suggesting that photoscreener can be reliably used for screening of refractive error and amblyopic risk factors in children. Although the authors did not do a sensitivity or specificity analysis in this particular report, the R^2 of 0.84 is significant enough to rely on. However, few important limitations should be kept in mind such as the range of refractive error reliably detectable by the machine, overestimation of hyperopic error, and underestimation of myopic error.^[1]

These devices can be easily carried by a team of optometrist or mid-level ophthalmic personnel or ophthalmic technician

to remote places for screening. The reporting format given by the device is simple to understand which makes it user-friendly. However, it is important to understand that these photoscreener devices have been designed to assist in early detection of amblyopic risk factors and not to replace the traditional way of refractive error detection.^[1]

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