

# Visual impairment screening program among pre-school children in Hamadan

Sir

Amblyopia is an acquired visual impairment that can be attributed to the effect of any structural abnormality of eye during childhood.<sup>[1-3]</sup> The prevalence of amblyopia varies from 2% to 4% in general population. Since visual pathways evolve during the 5<sup>th</sup> and 6<sup>th</sup> years of life, visual reduction will remain for whole life if it is not detected and treated during early childhood;<sup>[4-6]</sup> whereas the treatment will be successful if the visual impairment is detected in this time. Therefore, all screening and preventive services should be provided during early childhood.

Visual defects screening program and management of visual disorders are among the most important health services worldwide. In Iran, public health nurses in kindergartens and preschool centers conduct this program. In addition, Welfare Organization annually recalls all children aged 3-6 years for screening of visual disorders.<sup>[7]</sup> The purpose of the present study was to evaluate the accuracy of the screening tests used currently to detect visual disorders during early childhood.

A random sample of 250 apparently healthy children and 250 children with potential visual impairment was selected from 2000 preschool children who were examined during visual disorders screening program. The parents were invited to bring their children for re-examination. In this study, two ophthalmologists, three optometrists and 87 public health nurses collaborated. The sensitivity and specificity of the results of visual examinations conducted by optometrist and public health nurses were estimated by considering ophthalmologist's results as gold standard.

Based on the results, the sensitivity and specificity of the optometrist's screening results compared with that of the ophthalmologist were 85% and 90% respectively. On the other hand, the sensitivity and specificity of the public health nurses' screening results compared with that of the ophthalmologist were 81% and 67%, respectively.

We found the reliability of optometrists' diagnosis compared with ophthalmologist is good so that they can detect most of the visual impairment accurately but reliability of public health nurses' diagnosis is intermediate to fair. Although the sensitivity of their diagnosis is relatively good, but the specificity of their diagnosis is poor and leads to considerable false positive results. Therefore, periodic re-training workshop for public health nurses may improve their skill and lead to reduction in false positive and false negative results.

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