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Long-term visual and treatment outcomes of whole population pre-school visual screening in children: A longitudinal, retrospective, population-based cohort study

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We sought to report the long-term visual and treatment outcomes in a whole-population, orthoptic-delivered pre-school visual screening (PSVS) programme in Scotland and their associations with socioeconomic backgrounds and home circumstances. Retrospective case review was conducted on 430 children who failed PSVS. Outcome measures included best corrected visual acuity (BCVA) and proportion of amblyopia based on severity (mild, moderate and severe), binocular vision (BV) (normal, poor and none), ophthalmic diagnosis and treatment modalities. Parameters at discharge were compared to those at baseline, and were measured against Scottish Index of Multiple Deprivation (SIMD) and Health Plan Indicator (HPI), which are indices of deprivation and status of home circumstances. The proportion of children with amblyopia reduced from 87.1% at baseline to 27.2% at discharge ($p < 0.001$). 81.3% had good BV at discharge compared to 33.5 at baseline ($p < 0.001$). Association between final BCVA and BV is significant ($p < 0.001$). Children from more socioeconomically deprived areas (OR 2.01, $p = 0.003$) or adverse family backgrounds (OR 3.40 $p = 0.002$) were more likely to attend poorly and become lost to follow-up. Children from worse home circumstances were five times more likely to have residual amblyopia (OR 5.33, $p < 0.001$) and three times more likely to have poor/no BV (OR 3.23, $p < 0.001$) than those from better home circumstances. Orthoptic-delivered PSVS is effective and feasible for the early detection and treatment of childhood amblyopia. Children from unstable homes are more likely to have poorer visual outcomes.

Biography

Yan Ning Neo is an Ophthalmology Registrar in North London. He attended University of Edinburgh with a full undergraduate scholarship and graduated with multiple awards and prizes, including an external grant by the Royal College of Surgeons and Physicians Glasgow to carry out ophthalmology research at Harvard University. During his undertaking of an Ophthalmology Academic Foundation Programme in Scotland, he was rewarded few national research awards and prizes, including FaME Best Junior Doctor Award, TASME UK Young Educator Prize and Novartis Academic Bursary etc.

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