Reliability of Quality of Vision questionnaire results from children

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Purpose

Visual performance is an important consideration in paediatric myopia management, where optical treatment strategies typically employ multi-zone optics or mild contrast reduction that may induce visual artefacts. Visual performance can be assessed with the Quality of Vision (QoV) questionnaire, typically used for refractive surgery or IOL research with adults. The purpose of this study was to evaluate within-child consistency and parent-child agreement for a subset of QoV questions to evaluate the clinical utility of this questionnaire with children.

Methods

Myopic children aged 6-10 years (n=256) were enrolled in CYPRESS (NCT03623074): a 3-year multi-centre, randomised, controlled clinical trial to assess myopia management spectacle lenses (T1, T2 and C). The QoV questionnaire was abbreviated to include symptoms considered most relevant for myopia management optical corrections (glare, hazy vision and halos). Responses from each child and their parent or guardian were analysed across 3 time points (1, 2 and 3 years) in each study arm. Within-child agreement was evaluated using Fleiss' kappa, while parent-child response agreement was evaluated with Weighted Cohen's kappa. For both analyses, values range from -1 to +1, where -1 indicates strong disagreement and +1 indicates strong agreement.

Results

Within-child responses regarding frequency of symptoms showed moderate agreement across the study for glare (T1: 0.525; T2: 0.545; C: 0.536), hazy vision (T1: 0.499; T2: 0.479; C: 0.450) and halos (T1: 0.526; T2: 0.540; C: 0.492). Evaluation of parent-child responses showed slight agreement across all treatment groups and parameters (glare: 0.143, 0.154, 0.086; hazy vision 0.129, 0.121, 0.151; halos 0.110, 0.157, 0.273, for T1, T2 and C, respectively). There was more consistency of within-child agreement than between parent-child; parents may under-report the experience their children have.

Conclusion

Children as young as 6 years old can provide meaningful insights into their visual experience, which can help inform clinical decision-making in paediatric optometry.

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