**The impact of optical coherence tomography on clinical decision making in primary eye care**

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**Purpose**: There is accumulating evidence that optical coherence tomography (OCT) in specialist settings can facilitate the diagnosis of glaucoma and retinal disease, however the impact of this technology on clinical decision-making by community optometrists in primary eye care is currently unclear.

**Methods:** A group of community optometrists (n=50) initially completed a standardised training package on OCT interpretation followed by a computer-based assessment featuring 52 clinical vignettes, containing images of healthy (n=16) or diseased discs or fundi (n=36). Each vignette featured either a single fundus/disc photographic image, or a combination of a fundus/disc image with the corresponding OCT scan. For each case, the optometrist selected their diagnosis from a pull-down list and their confidence in their decision using a 10-point Likert scale. Pairwise statistical comparisons of the fundus image alone and fundus image/OCT combination were calculated.

**Results:** The median period the optometrists had been qualified was 10 years (interquartile range (IQR) 4-19 years). The mean percentage of correct diagnoses using fundus imaging alone was 61.6% (95% CI 58.9%-64.4%) and for the combination of fundus image/OCT was 79.8% (95% CI 77.4%-82.1%). The median false negative rate with fundus alone was 19.2% (IQR 11.5%-23.1%) reducing to 7.7% (IQR 3.8%-11.5%) with the combination. Median confidence scores for fundus imaging alone was 8.00 (IQR 7.00-8.00) and 8.25 (IQR 8.00-9.00) for the combination. Improvements in performance and confidence were statistically significant (p<0.0001).

**Conclusion**: The results from this study suggest that OCT in combination with fundus imaging improves optometrist’s diagnostic performance and confidence when compared to fundus imaging alone. These initial results suggest that OCT provides valuable additional information that could augment case finding for glaucoma and retinal disease; however further research is needed to assess its performance in a routine clinical practice setting.