

00172 Teleophthalmology Screening in the Community Using a Hand-held Fundus Camera

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Aims: The objectives of this study were to investigate the feasibility of a hand - held fundus camera as a screening tool for community screening, and to compare grading of the images among readers with different levels of experience.

Methodology: Fundus images from 100 non - dilated eyes were obtained from a community eye screening event. An onsite ophthalmologist consultant first assessed the feasibility of image acquisition using hand - held camera, reviewed the images, and formed a diagnosis. These images were then graded by an optometrist and a medical student, and degree of agreement among three readers was obtained using Fleiss kappa.

Agreement between student and consultant, as well as optometrist and consultant, were obtained using Cohen's kappa coefficient for each parameter. Parameters evaluated include image clarity, field definition, and interpretation (normal/abnormal) on an ordinal scale.

Result: We successfully acquired retinal images using the hand - held camera by a trained ophthalmic technician.

There was fair agreement between student and consultant (0.215) and slight agreement between optometrist and consultant (0.174) for image clarity.

There was fair agreement between both student and consultant (0.382), and between optometrist and consultant (0.367) for field of view of the image.

There was slight agreement between student and consultant (0.123), and moderate agreement between optometrist and consultant (0.462) for interpretation of image (abnormal/ normal).

Conclusion: We conclude that community screening of retinal diseases can be accomplished with low - cost hand - held cameras by trained healthcare workers, and graders with limited experience can possibly grade images with comparative accuracy. These have potential to facilitate earlier diagnosis of vision - threatening diseases.