Cataract home visual assessment with SpotChecksTM contrast sensitivity

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Background

The COVID-19 pandemic caused a vast increase in cataract surgery waiting times[1]. RCOphth have advised prioritisation criteria for patients awaiting surgery to direct care based on need[2]. This is challenging without assessing patients in eye clinic, a high-risk environment during a global pandemic.

Purpose and Methods

This study aims to explore whether patients referred for cataract assessment are able to independently carry out a simple pen and paper at-home contrast sensitivity screening test (SpotChecksTM, Precision Vision – **Figure 1**) from home. The tests were sent by post to patients once they were referred to the ophthalmology department – no prior selection was carried out!

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The test was then repeated under supervision in eye clinic and compared to the standard Pelli-Robson contrast sensitivity test.

We have no commercial affiliation with Precision Vision and the SpotChecksTM were bought through Crabb Lab funds.

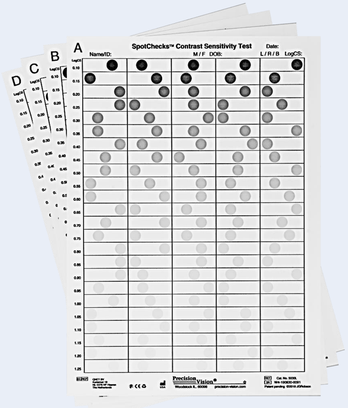


Figure 1: The SpotChecksTM contrast sensitivity test

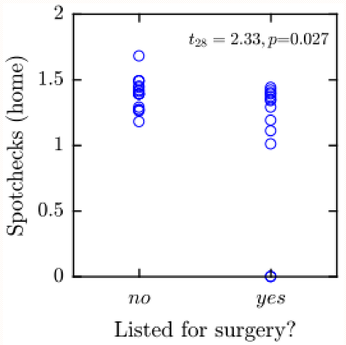


Figure 2 – SpotcChecksTM scores for patients listed vs not listed for cataract surgery

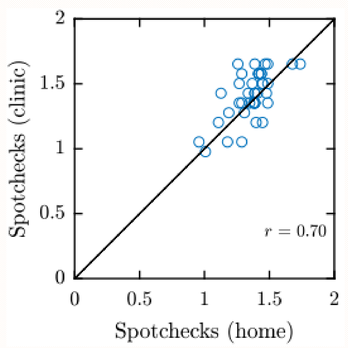


Figure 3 – Correlation of home vs clinic SpotchecksTM

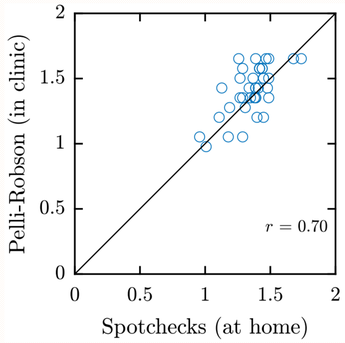


Figure 4 – Correlation of home SpotchecksTM with clinic Pelli-Robson

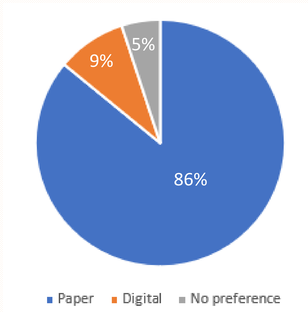


Figure 5 – Questionnaire preference of home test, paper vs digital

Results

- Out of 234 patients invited to participate, 108 patients returned the home SpotChecksTM (return rate 46%)
- Out of these 108 patients, 22 have so far went on to have further repeat SpotChecksTM and Pelli-Robson in clinic
- Eyes listed for cataract surgery scored significantly lower, on average, on the home-based SpotChecksTM than eyes that were deemed not to require immediate surgery (2-sample t-test; t28=2.3, p=0.027) (**Figure 2**).
- Home SpotChecksTM also exhibited a reasonable correlation with clinic SpotChecksTM (r=0.7, p<0.001) (**Figure 3**) and also with clinic Pelli-Robson (r=0.7, p<0.001) (**Figure 4**).
- An anonymous questionnaire showed that the vast majority of patients found the home test very easy to perform, understood what was required of them and enjoyed the test. Notably, 86% (19) of patients expressed a preference for pen-and-paper testing versus a hypothetical digital app (**Figure 5**).

The Future

Overall, preliminary data indicate that patients are willing and able to carry out home SpotChecksTM and that such data has the potential to be utilised as a measure of disease severity and possibly to help stratify patients on the waiting list for cataract surgery.

With so many patients having waited so long for their initial clinic appointment, sending them a contrast sensitivity test that can easily be carried out in the comfort of their own home could be an effective way to prioritise based on need without patients having to come into eye clinic. This could decrease clinic attendance at a time when this is a priority.

References:

1) House of Commons Committee of Public Accounts. *NHS backlogs and waiting times in England.* https://committees.parliament.uk/publications/9266/documents/160332/default/.

2) The Royal College of Ophthalmologists. (August 2020). *Restarting and Redesigning of Cataract Pathways in response to the COVID 19 pandemic.* Available: https://www.rcophth.ac.uk/wp-content/uploads/2020/08/RCOphth-GIRFT-COVID-19-Resumption-Of-Cataract-Services_August2020.pdf. Last accessed 5.

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