Digital and Social Barriers to Remote Consultation in Ophthalmology Clinics

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Introduction

- Ophthalmology services have among the longest backlogs of any specialty and delays in patient care can pose a high risk of avoidable visual loss.
- Scotland's NHS Recovery Plan and the NHS Long Term Plan promote greater use of remote consultations to improve efficiency and reduce carbon emissions.
- Recent development of validated apps enabling accurate visual acuity testing may allow more patients to be suitable for remote consultations.
- There remains a need to develop strategies to deliver comprehensive remote ophthalmic care and to identify patient groups for whom this would be less suitable.

Objective

- To investigate social and digital barriers to remote consultations and home vision testing in the population attending ophthalmology clinics in a large tertiary centre.

Methods

- Patients attending Addenbrooke's Hospital eye clinics in person were surveyed by medical students using a validated eHealth innovation acceptability questionnaire.[1]
- Respondents were drawn from across the Cambridgeshire and Peterborough region, known to have high levels of socioeconomic inequality.
- Statistical significance was evaluated using chi-squared tests with Bonferroni correction.

Results – demographics and access to services

- We surveyed 101 ophthalmology patients (45 male, 56 female) over a period of two months.
- Glaucoma, retinal and emergency eye clinic patients were the most frequent respondents (29%, 23% and 22% respectively).
- White/White British patients accounted for 81% (81/101) of the group surveyed, with the rest comprised of Asian/Asian British and Black/Black British patients.
- The vast majority (95%) of respondents had internet access at home, with four of the five respondents without internet access being White/White British over the age of 74.

Figure 1: Survey respondents by age group

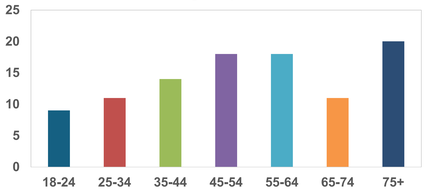
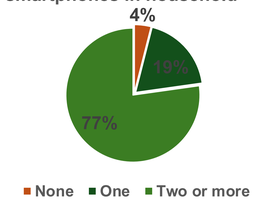


Figure 2: Number of smartphones in household

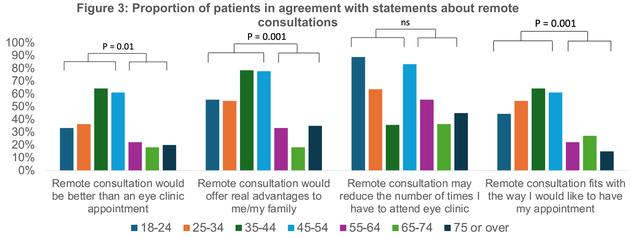


- Ninety percent (91/101) had two smart communication devices including at least one large-screened device, which is required for utilizing some remote vision self-testing tools.
- Digital access was associated with neither age nor ethnicity.
- The most possessed large-screen devices were smart TVs, windows laptops, and iPads, with 50% of respondents reporting access to each of these in their households.
- Experiences of video-based consultations among the 30% of patients who had received these were highly positive (21 out of 30 rated them good to excellent).
- Using postal code data, we estimated that the 68 respondents who travelled to the clinic solely by either car or bus resulted in 0.69 tonnes of CO_2-equivalent emissions.

Results and discussion - patient views

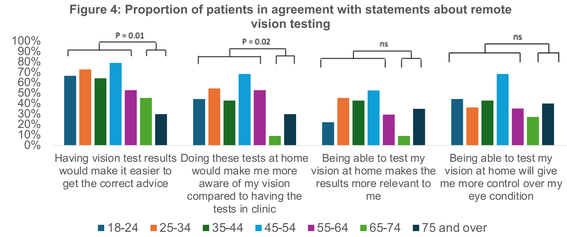
- Respondents under the age of 55 had more positive opinions of remote consultations, being 2.5 times more likely to view them as better than face-to-face appointments ($p = 0.01$) and 2.2 times more likely to agree that they would provide advantages for them or their families ($p = 0.001$). [Fig. 3]

Figure 3: Proportion of patients in agreement with statements about remote consultations



- Respondents younger than 65 had more positive views towards remote vision testing. They were 1.9 times more likely to agree that remote vision testing would make it easier to get correct advice and 2.5 times more likely to agree that it would improve their awareness of their vision ($p < 0.05$). [Fig. 4]

Figure 4: Proportion of patients in agreement with statements about remote vision testing



- There were no significant age-associated differences in views about whether remote vision testing would give patients more control over their condition or make results more relevant to them.
- While all respondents were attending face-to-face appointments, any selection bias should be minimal as only a small minority (<10%) of appointments at our department are currently carried out remotely.

Reasons for patient hesitancy

- Concerns about remote consultations raised by patients included:
  - "Lacking the human touch"
  - "Remote consultations are never suitable for emergency appointments"
  - a perceived inability to provide reassurance
  - requiring family to help navigate anything involving technology
  - worries that accepting a remote consultation would reduce the chance of future appointments being in person.
- Some patients expressed doubt about the accuracy of an online vision testing tool or their ability to properly use it. Many others said remote vision testing would be helpful if it allowed more frequent monitoring of visual acuity.

Conclusions

- Our findings suggest that a large majority of ophthalmology outpatients seen in our department have access to devices that enable remote consultations and vision testing.
- Respondents expressed mixed sentiments towards remote ophthalmic services which tended to be more negative among older age groups.
- Reasons for hesitancy identified can guide efforts to educate and reassure patients about the benefits of remote healthcare where appropriate.

References:
[1] Atkinson N. L. (2007). Developing a questionnaire to measure perceived attributes of eHealth innovations. American journal of health behavior, 31(6), 612-621.