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Investigating the feasibility and acceptability of using a chatbot to improve adherence to glaucoma medication

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Background

- Adherence to long-term medication is poor[1]
- Sub-optimal adherence reduces treatment effectiveness leading to disease progression and visual loss
- Interventions to improve adherence have achieved limited success, lacking robust theoretical underpinning[2,3]
- The Theoretical Domains Framework (TDF) represents a theory-driven basis for identifying determinants of behaviour change suitable for targeting with a behaviour change intervention[4]
- Chatbots, a type of software technology accessed by a mobile phone, can interact with users by simulating interactive conversations. There is a lack of evidence investigating their potential benefits in glaucoma

Project Aim

To assess feasibility and acceptability of a chatbot to improve glaucoma medication adherence

Methods

Systematic review identifying modifiable determinants of adherence

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Map determinants to TDF domains

↓

Inductive analysis – subgroups of themes generated

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Identify key modifiable determinants and map to BCTs

Scoping review – identify types of technology available to improve medication adherence

↓

Semi-structured interviews with glaucoma patients and eye care professionals

↘ ↙

Identify most appropriate chatbot
Pilot with PPI involvement

↓

Feasibility trial investigating effectiveness and acceptability of chatbot

Key
BCT – behaviour change technique
PPI – patient and public involvement

Progress to date

- Systematic review protocol registered on Prospero. Registration no. CRD42022330637
- Glaucoma UK article – published, generating glaucoma community awareness

Objectives

- Development of behaviour change intervention in line with UK Medical Research Council Framework, which advocates intervention development that is based on empirical evidence with a theoretical underpinning of the problem[5]
- Ultimately, to benefit glaucoma patients, providing evidence for future RCTs on how technology, such as chatbots, could improve medication adherence

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References

1. Sabaté E, World Health Organization, editors. Adherence to long-term therapies: evidence for action. Geneva: World Health Organization; 2003. p. 198.

2. Gray TA, Orton LC, Henson D, Harper R, Waterman H. Interventions for improving adherence to ocular hypotensive therapy. Cochrane Database Syst Rev. 2009 Apr 15;(2):CD006132.

3. Waterman H, Evans JR, Gray TA, Henson D, Harper R. Interventions for improving adherence to ocular hypotensive therapy. Cochrane Database Syst Rev. 2013 Apr 30;(4):CD006132.

4. Michie S, Johnston M, Francis J, Hardeman W, Eccles M. From Theory to Intervention: Mapping Theoretically Derived Behavioural Determinants to Behaviour Change Techniques. Appl Psychol. 2008;57(4):660–80.

5. Skivington K, Matthews L, Simpson SA, Craig P, Baird J, Blazeby JM, et al. A new framework for developing and evaluating complex interventions: update of Medical Research Council guidance. BMJ. 2021 Sep 30;374:n2061.