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



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Background

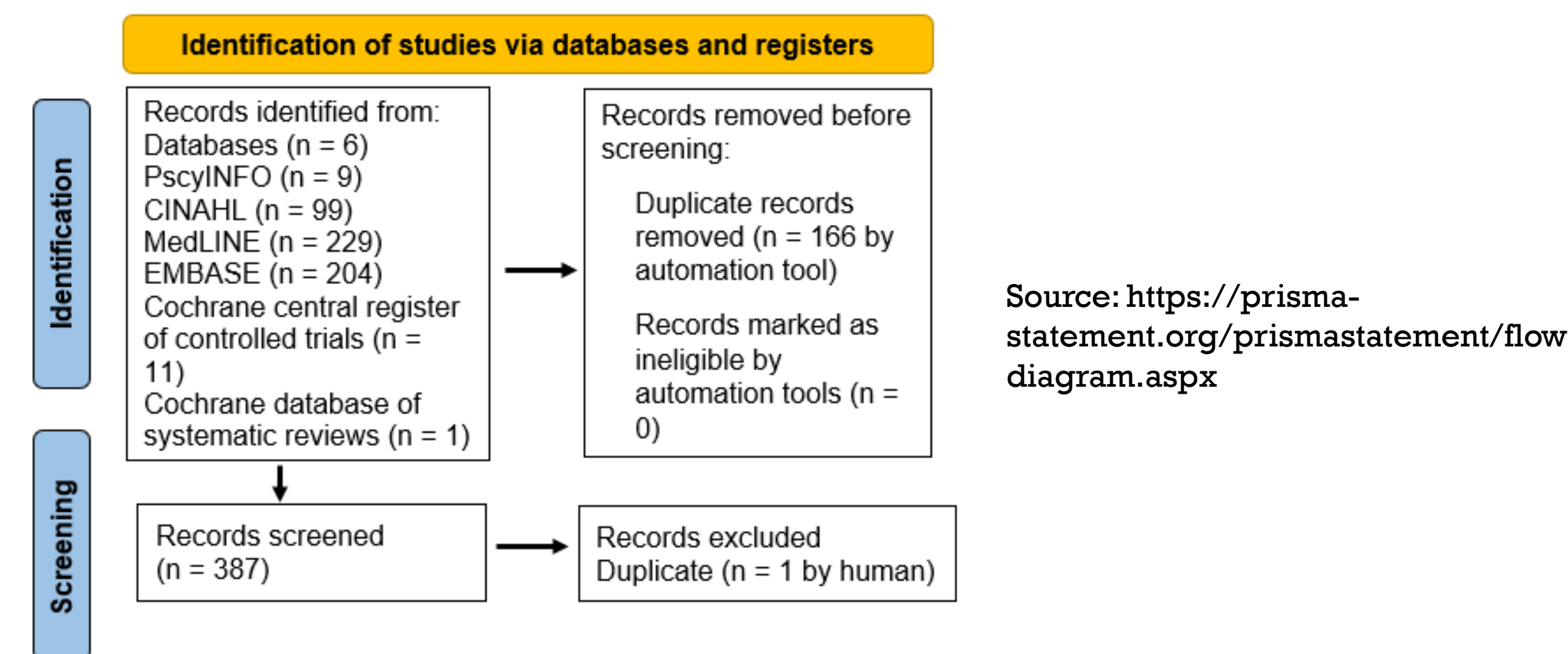
- Adherence to long-term medication for chronic conditions is poor.¹ Sub-optimal adherence reduces treatment effectiveness leading to disease progression and visual loss.
- Interventions to improve adherence have achieved limited success, lacking robust theoretical underpinning.^{2,3}
- Chatbots (AI technology) are used in other health conditions to improve medication adherence.
- There is a lack of evidence investigating their potential in glaucoma care.
- We aim to investigate the determinants of glaucoma medication adherence and whether technology can help improve this.

Methods

- Systematic review will identify the key modifiable determinants of glaucoma medication adherence.
- The Theoretical Domains Framework (TDF), will be applied to identify the determinants of behaviour change.⁴
- Content and framework analysis – data extraction, deductive analysis (TDF coding), inductive analysis and identification of important domains.
- Interviews will be conducted with glaucoma patients and practitioners.
- Scoping literature review will identify what forms of technology are available.
- A suitable technology-based intervention will be identified with PPI and utilised in a feasibility trial.

Results to date

- Systematic review underway, protocol registered with Prospero. n= 387 potential papers identified.
- TDF codebook developed to aid deductive analysis.



TDF domain and definition	Determinants (i.e. barriers and/or facilitators) of adherence
Knowledge: awareness of the existence of something	Patient's knowledge or HCP/carer referring to patient's knowledge of: <ul style="list-style-type: none"> Glaucoma Rationale for using eyedrops Consequences of adherence/nonadherence Treatment application and regimen Side effects of eyedrops HCP awareness/lack of awareness regarding adherence/nonadherence in practice
Skills: ability or proficiency acquired through practice	<ul style="list-style-type: none"> Physical skills needed by patient/carer to instil eyedrops correctly e.g. poor manual dexterity prevents opening or squeezing bottle or poor VA prevents being able to use drops (barrier) Ability to obtain ongoing supplies of eyedrops by patient (facilitator) References made by HCP regarding patient's ability to instil eyedrops correctly HCP competence may include skills needed to inquire about/assess adherence (facilitator)
Behavioural Regulation: anything aimed at managing or changing observed or measured actions	<ul style="list-style-type: none"> References from either patient / HCP in using/providing techniques/habits/processes to remember to instil eyedrops

Extracts from TDF codebook

- Ethics approval for interviews granted. Topic guide, mapped to TDF, finalised.
- Recruitment process started. Glaucoma UK article published.



"Do you know why you take your drops?" (Knowledge domain)

"On a daily basis do you have any problems putting your eyedrops in?" (Skills domain)

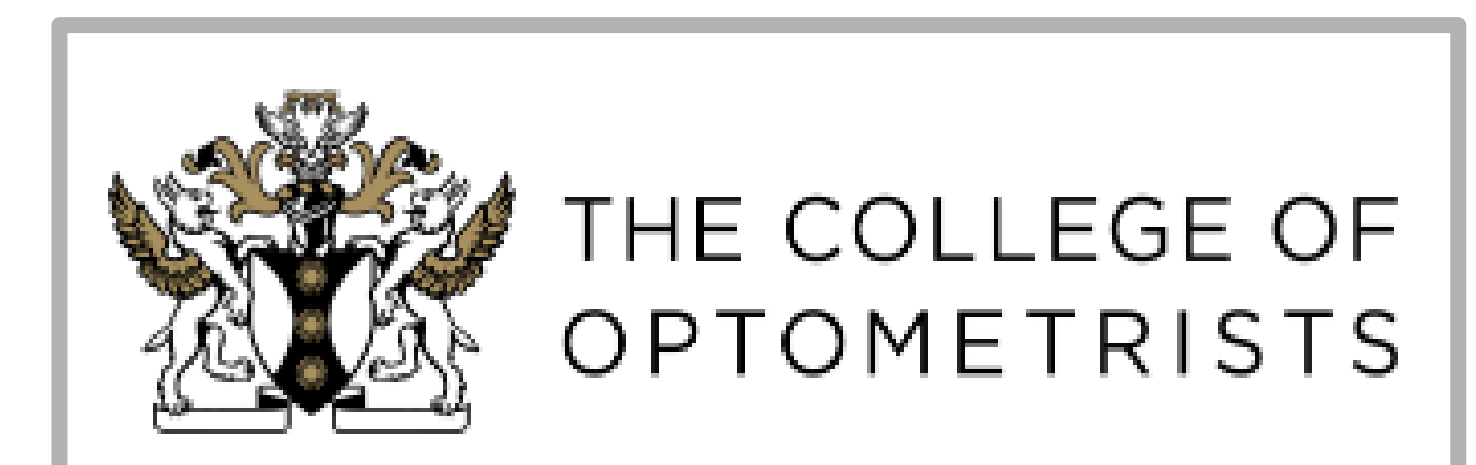
"How do you classify a patient as nonadherent?" (Knowledge domain)

"Do you currently recommend any form of technology to help patients take their eyedrops?" (Behavioural regulation domain)



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Summary

- Systematic review will identify key factors influencing glaucoma medication adherence.
- Development of behaviour change intervention is in line with UK Medical Research Council Framework.⁵
- Feasibility trial outcomes will provide evidence for future RCTs into the usefulness of technology to improve adherence.

Acknowledgements

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